Occupational HAZARDS

SERIAL RECORD
AUG 16 1949

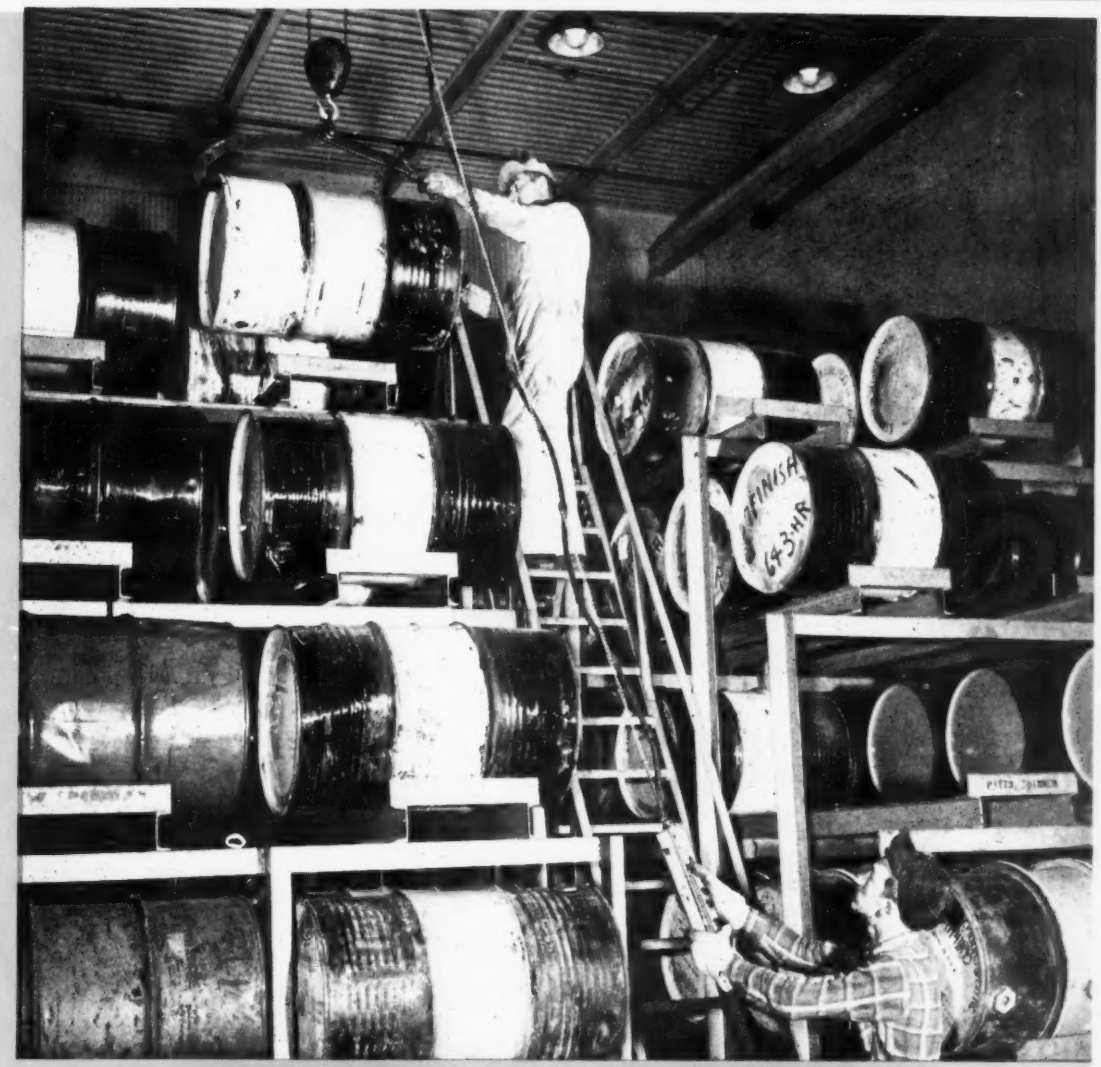
THERE'S PROFIT IN PREVENTION

AUGUST
1949

●

ROUTE TO
OUR PLANT
PROTECTION
N: ARTICLES
ON FIRE
PROTECTION
OR INDUSTRY

●

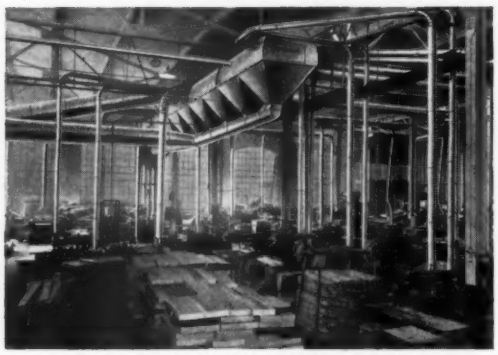


IN THIS ISSUE:

. . . LEAD PAINT HAZARDS . . .
FIRE PREVENTION AT FIRESTONE
. . . RESPIRATORY PROTECTION . . .

ONE UNDIVIDED RESPONSIBILITY

TO SOLVE YOUR DUST and FUME CONTROL PROBLEMS



Exclusive Kirk & Blum Plenum Main Systems in large North Eastern Toy Manufacturing Plant.

For 42 years, Kirk & Blum has specialized in the DESIGN, FABRICATION and INSTALLATION of efficient, dependable systems for the removal of dust and fumes.

DESIGN: Kirk & Blum engineering specialists survey your plant and then design your system, selecting equipment most suitable for your problem.

CONSTRUCTION: Kirk & Blum fabricates the complete system (equipment excepted), "tailor made" for your installation.

INSTALLATION: The Kirk & Blum contract includes responsibility for the entire system, installed by mechanics with years of specialized experience in the installation of such systems.

• As a result, you have one undivided responsibility—one complete contract for an installed system, ready to operate. The Kirk & Blum Mfg. Co., 2802 Spring Grove Ave., Cincinnati 25, O.

Dust Collecting Systems at American Mfg. Concern, Falconer, N. Y.

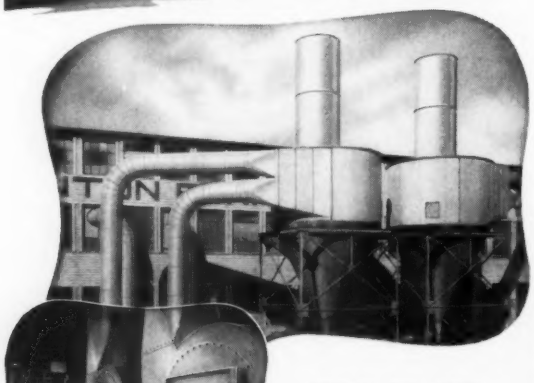
FOR CLEAN AIR . . . THE [redacted] TOOL

KIRK AND BLUM

DUST & FUME CONTROL SYSTEMS

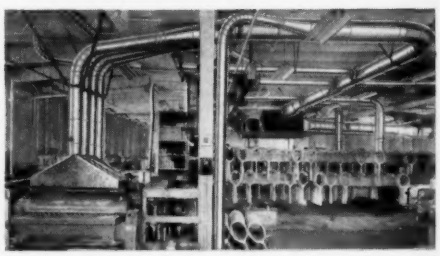
WRITE FOR ANY OF THE FOLLOWING BOOKLETS:

"Dust Collecting Systems in Metal Industries"
"Blower Systems for Woodworking Plants"
"Fan Systems for Various Industries"

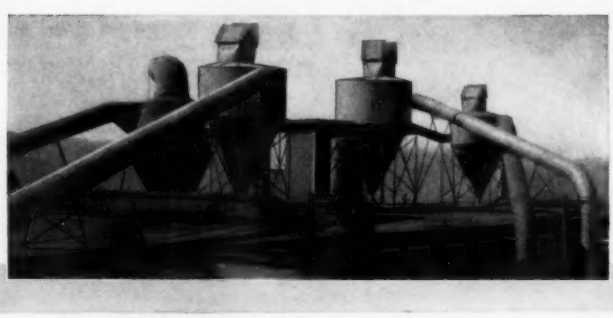


Exterior Fan Room saves plant space at the Morganton Furniture Co., Morganton, N.C.

K & B streamlined Tapered Main System for the Sports Products Co., Cincinnati, Ohio.



This cluster of Cyclones collects sawdust, shavings and chips at the Bernhardt Furniture Co., Lenoir, N. C.



Beyond Comparison

"THE THINKER
BY AUGUSTE RODIN
Metropolitan Museum of Art,
New York City

Rodin's celebrated greatness began with his creation of this renowned bronze which became his "most famous and universally known statue."[1] Described as the foremost master of modern sculpture and a remarkable intellectual force, "Rodin's art is essentially original and personal—his skill is comparable to that of Michelangelo, Raphael and Titian."[2]

Great technical skill, developed through years of patient endeavor, is apparent in any achievement which maintains indefinitely a unique position of superiority among many imitators. Because this is so, it is not chance or circumstance that has created for Pax Heavy Duty a singular eminent position in its field. It is the constant, painstaking research by trained technicians that has built for this fine product an unsurpassed reputation for excellent quality, dependable safety, cleansing efficiency and exceptional economy.

[1] Rodin, by Philip R. Adams

[2] The Mentor, by M. Emile Villemin

PAX

PAX-LANO-SAV HEAVY DUTY GRANULATED SKIN CLEANSER

There is Nothing Finer For All General Occupational Skin Cleansing

PAX-LANO-SAV*—a superior skin emollient combining lanolin and other special skin normalizers.

49 H

What Is The PRODUCT USE FACTOR of PAX?

ADVERTISED IN AMERICAN MEDICAL ASSOCIATION PUBLICATIONS

PAX-LANO-SAV EMOLLIENT was developed in our Research Laboratory after years of intensive research. It is superior to lanolin alone because it skillfully combines generous quantities of lanolin PLUS other fine skin normalizers making PAX-LANO-SAV EMOLLIENT more effective in a skin cleanser. Integrated into PAX-LANO-SAV HEAVY DUTY Granulated Skin Cleanser in abundant quantity, PAX-LANO-SAV EMOLLIENT helps to protect the natural acid mantle of the skin during the wash. Skillful formulation of PAX-LANO-SAV HEAVY DUTY Granulated Skin Cleanser, remarkable cleansing ability, quick profuse suds and great bulk assure exceptional economy together with real satisfaction in use. Because it always stays free-flowing it may be used in the usual commercial dispenser for powdered soap.

G. H. PACKWOOD MANUFACTURING CO. • 1545-55 TOWER GROVE AVE. • ST. LOUIS 10, MO.

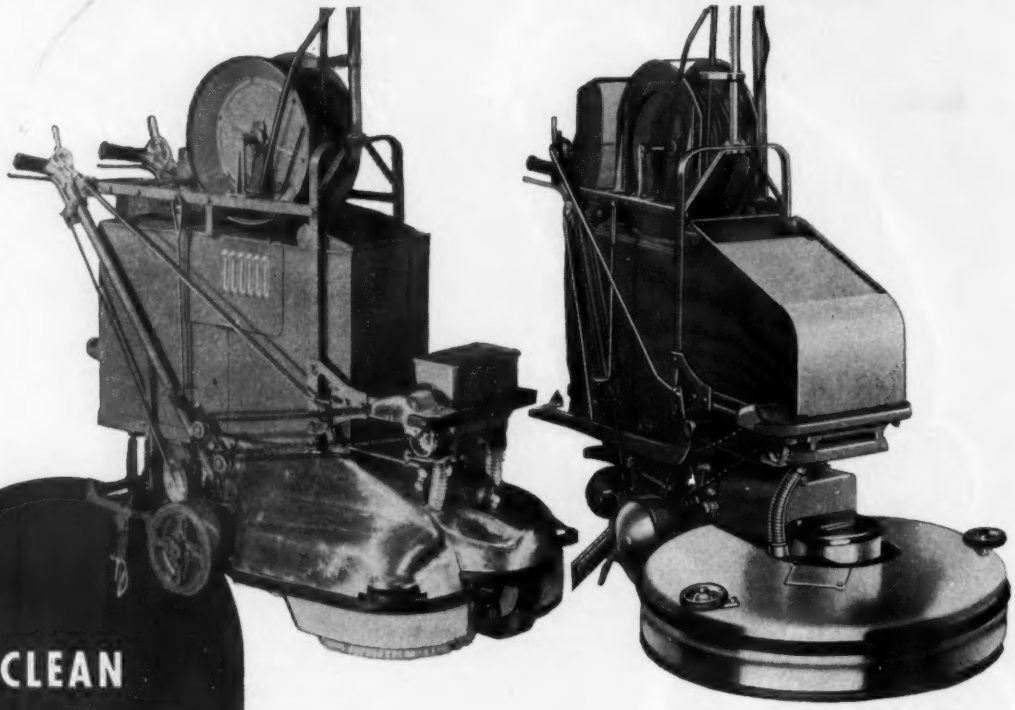
Manufacturers of Fine Industrial Skin Cleansers

® Trademark Reg. U. S. Pat. Off.

*Tradename of G. H. Packwood Mfg. Co.

In addition to PAX-LANO-SAV HEAVY DUTY, PAX also offers the following powdered or granulated quality skin cleansers: PAX CORN-TEX • PAX HYSPEED • DICTATOR SPECIAL PURPOSE • BORAPAX • SUPER-X • VELVAPAX LIGHT DUTY • OFFICE-PAX • PAX MECHANICS. Also available are PAX WATERLESS and PAX HECTO INK CLEANSING CREAM • PAX SKIN CLEANSER ECONOMIZER DISPENSERS • and many other fine PAX Products.

Finnell SCRUBBER-VACUUM MACHINES...



CLEAN LARGE-AREA FLOORS

The Modern, Faster Way

•

REDUCE LABOR COSTS

With a *Finnell Scrubber-Vacuum*, all four of the floor-cleaning operations can be done mechanically! A *Finnell Scrubber-Vacuum* (1) applies the cleanser, (2) scrubs, (3) rinses if required, and (4) picks up. With one or two operators, this *all-in-one* unit can do a cleaning job better in half the time it takes a crew of six to eight using separate equipment for the several operations.

The model shown above at left, for heavy duty requirements, has a cleaning capacity up to 8,750 sq. ft. per hour. The single disc machine shown above at right, for use on the smoother type of floors, cleans up to 10,000 sq. ft. per hour! *Finnell* also offers a *Scrubber-Vacuum* for smaller operations . . . for use in congested areas. All *Finnell Scrubber-Vacuum Machines* are *self-propelled.*

There's *a Finnell man nearby* to help train your maintenance operators in the proper use of *Finnell Equipment.* For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 3508 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

Everything FINNELL for Floor Care

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

Occupational HAZARDS

VOLUME 11 • No. 10

IRVING B. HEXTER
President

LESTER P. AURBACH
Vice President

EDWIN M. JOSEPH
General Manager

JERRY CLOSE
Editor

WILLIAM V. LINAS
Production Director

Address all communications to
OCCUPATIONAL HAZARDS

1240 Ontario Street
Cleveland 13, Ohio
Phone: Tower 1-0264
Teletypewriter: CV-233

SALES OFFICES

CLEVELAND 13
1240 Ontario Street

NEW YORK 18
19-25 W. 44th Street
Room 412

CHICAGO 1
64 E. Lake Street
Room 1013

LOS ANGELES 14
1250 Wilshire Boulevard
Room 403
FRED W. FRIESENFELDT

Published monthly by OCCUPATIONAL HAZARDS, INC., an affiliate of INDUSTRIAL PUBLISHING CO., publishers of APPLIED HYDRAULICS, DIE CASTINGS, FLOW, INDUSTRY & WELDING, COMMERCIAL REFRIGERATION AND AIR CONDITIONING and THE TAXICAB INDUSTRY. Member, Controlled Circulation Audit, Inc. Not responsible for unsolicited editorial material.
By SUBSCRIPTION, one year, $3.00.
Single copies, 30 cents.
Canada: One year, $4.00.
Foreign One year, $5.00.

CONTENTS FOR AUGUST 1949

"THERE'S PROFIT IN PREVENTION"

SAFETY WITH EASE—Storing a drum of thinner on the top rack in the paint storage room of the Westinghouse Electric Appliance Division plant in Mansfield, Ohio is done easily and safely with a floor operated bridge crane and a movable ladder.

	Page
Letters to the Editor	7
Jones & Laughlin Eliminates Shop Fog	13
Exposures in the Lead Paint Industry	14
Life and Times of Careless Cal (Chapter 2)	16
Mobile X-Ray Unit Pays Off	17
Fire Prevention Equipment at Firestone	18
Confessions of Felix Fire	20
Right off the Docket	22
Accidents in the News	25
Useful Literature	26
Technical File on Toxic Gases and Vapors	27
Respiratory Protective Devices	29
And Sudden Injury	30
New Products	32
Advertisers' Index	40

it's NEW

it's MORE COMFORTABLE

it's RUGGED

Heavy Duty Glove

AO 5X264

Feel it, test it, wear it and you'll see why this latest addition to the AO steel stapled line is ideal for handling small castings, rough stock, grinding and similar work.

Made of specially treated chrome tanned cowhide leather for long wear, the glove features a canvas back with elastic strap to overcome hand fatigue while providing a cooler feeling and snug fit.

All seams are steel sewed and the seam along the forefinger has been eliminated for longer glove life and added comfort at this vulnerable point.

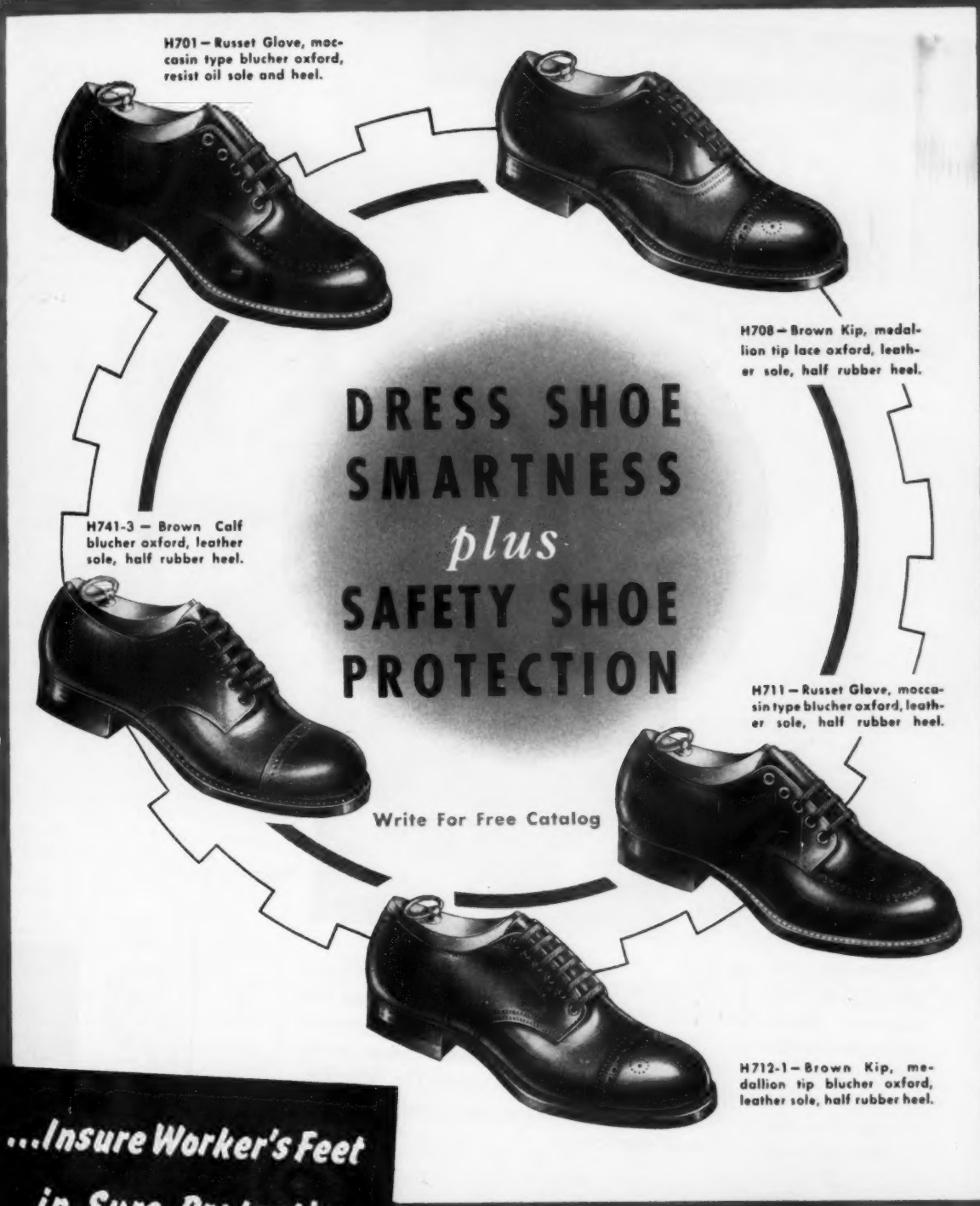
Wearing surface of the palm has also been increased by extending the palm — no bib patch — another comfort feature.

The steel stapled strap at the thumb crotch fortifies one of the weakest parts of a glove. There is a steel stapled patch on face of thumb and a short cufflex cuff with tape binding.

You'll lower your glove costs with the 5X264 —ask your AO Safety Representative or inquire at your nearest AO Branch Office.

American Optical COMPANY Safety Division

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES


H701 — Russet Glove, moccasin type blucher oxford, resist oil sole and heel.
H708 — Brown Kip, medallion tip lace oxford, leather sole, half rubber heel.
DRESS SHOE SMARTNESS plus SAFETY SHOE PROTECTION
H741-3 — Brown Calf blucher oxford, leather sole, half rubber heel.
H711 — Russet Glove, moccasin type blucher oxford, leather sole, half rubber heel.
Write For Free Catalog
H712-1 — Brown Kip, medallion tip blucher oxford, leather sole, half rubber heel.

...Insure Worker's Feet in Sure Protection

with HY-TEST ANCHOR FLANGE SAFETY SHOES

THE WORLD'S LARGEST SELLING SAFETY SHOE

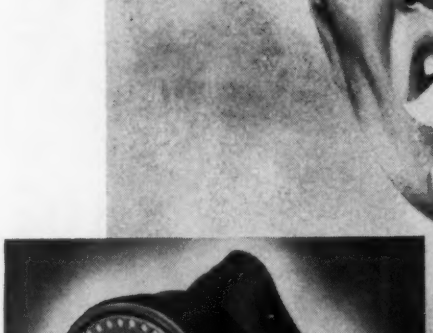
HY-TEST DIV: INTERNATIONAL SHOE COMPANY • ST. LOUIS 3, MO. • EASTERN OFFICE • MANCHESTER, N. H.

HY-TEST SAFETY SHOES

"Sure, I'd wear a respirator . . .

. . . if it was comfortable!"

Respirators must fit properly and provide ease of breathing before workers stop risking their lungs—and your profits.



Respirator Style 45D

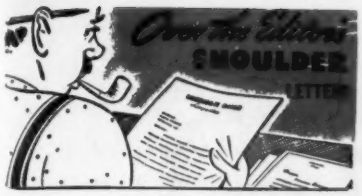
Protection must be combined with comfort. One without the other means a wasted investment in safety equipment. Here is a WILLSON lightweight respirator, approved by the U. S. Bureau of Mines for use in dusts and mists. It has gained wide acceptance in industry through workers' willingness to wear it. Normal breathing is assured through easily replaceable filters and a positive acting exhaust valve. The facepiece, in two sizes with adjustable wire nose spring and adjustable elastic headband, is adaptable to all face sizes.

DAILY REMINDERS
Such as Willson "Blind Man" Safety Posters keep workers aware of the need for wearing goggles. Supplies available on request.

*®

WILLSON*
"Established 1870"

WILLSON PRODUCTS, INC., 200 WASHINGTON ST., READING, PENNA.



Do you have any questions, theories or ideas concerning industrial health or safety? If you want to give them a good airing—send 'em along. We'll publish all space permits.

Peculiar Hazard

OCCUPATIONAL HAZARDS:

We have read with great interest various articles in your magazine concerning industrial health and safety.

We have one particular problem in our Pattern Show with which perhaps you could assist us. We have an operation involving the Table Saw which we call a "stitching operation." This involves cutting grooves in the ends of two pieces, which are subsequently glued together to form an arc or semi-circle.

In using the circular saw in this operation, we have been unable to find any way to use a pusher stick or any other method to assist in keeping the fingers away from the circular saw. Various types of holding devices have been suggested; however, none have proven practical. We felt that perhaps you or one of your readers might have run across this particular operation and determined a satisfactory solution.

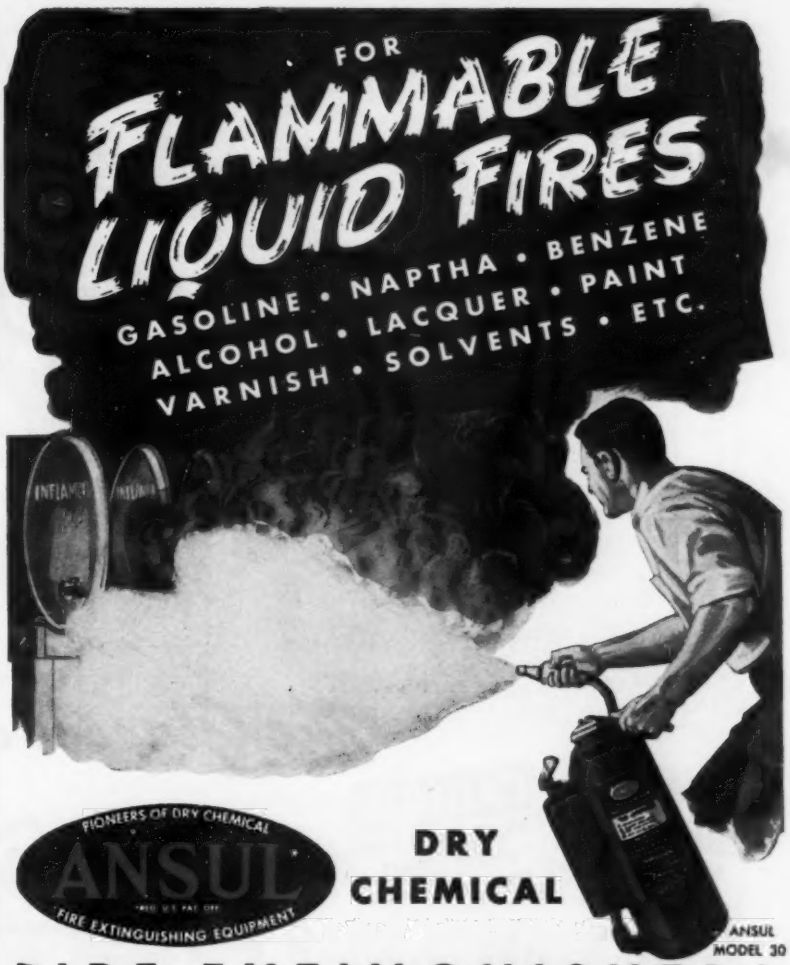
We would appreciate any information you might have regarding this operation. — O. J. Haavik, Local Mgr., Industrial Relations, Continental Can Co., Inc., Seattle, Wash.

This particular set of circumstances has never been called to our attention before but in the hope that some of our readers might help you we will be glad to publish your letter in our "Letters to the Editor" column. We hope that this will result in some information for you.— Ed.

Editorial On Americanism

TELEGRAM TO OCCUPATIONAL HAZARDS:

REQUEST PERMISSION TO USE "LET'S TAKE A TRIP" IN OUR EMPLOYEE PUBLICATION FOR MAY. W. T. WILLIAMS, TORRINGTON MFG. CO.



FIRE EXTINGUISHERS ARE YOUR *BEST* PROTECTION

...and most economical, too! Tests conducted by impartial, nationally recognized approval laboratories have proved the superiority of Ansul Dry Chemical Fire Extinguishers on *Flammable Liquid Fires.*

In addition, Ansul Fire Extinguishers provide greater safety for the operator. The stream of Ansul Dry Chemical forms a protective screen safeguarding him against radiant heat.

More and more industrial plants, transportation companies, oil companies, etc. are switching to Ansul Extinguishers as their first line of fire defense. There is a reason.

Get the facts. Send for your copy of File No. 406. You'll also receive our latest literature together with comparative rating charts for the various types of fire extinguishers.

- Safe for use on electrical fires, too! Even high voltages are not conducted by dry chemical stream.
- Can be recharged at scene of fire furnishing continuing protection.
- Annual recharging is not necessary. Low maintenance costs.
- Longer range stream of dry chemical is effective in winds and drafts.
- Ansul Dry Chemical is non-abrasive, non-corrosive, non-toxic.
- Listed and Approved by Underwriters Laboratories and Factory Mutual Laboratories.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS IN PRINCIPAL CITIES IN THE UNITED STATES, CANADA, AND OTHER COUNTRIES

Eye HAZARD SIGNS

STONEHOUSE SIGNS
For Accident Prevention

SAFETY FIRST
WEAR GOGGLES OR USE SHIELD
SAVE YOUR EYES WEAR GOGGLES
SAFETY FIRST
WEAR YOUR GOGGLES WHEN GRINDING
NOTICE
ALL PERSONS WORKING IN THIS DEPARTMENT — MUST — WEAR GOGGLES
DANGER
WEAR GOGGLES WHEN HANDLING ACID OR SOLDER

The Glasses of Confucius

FOR centuries the Chinese have worn glasses, tho in those early days they knew nothing of the grinding of corrective lenses.

The first definite historical reference to the wearing of glasses is found in the writings of Confucius, about 500 B. C.

Marco Polo, the explorer, who visited China during the reign of Khublai Khan, in the 13th century, A. D., also states that he found aged persons in the empire wearing spectacles with tortoise frames.

.....

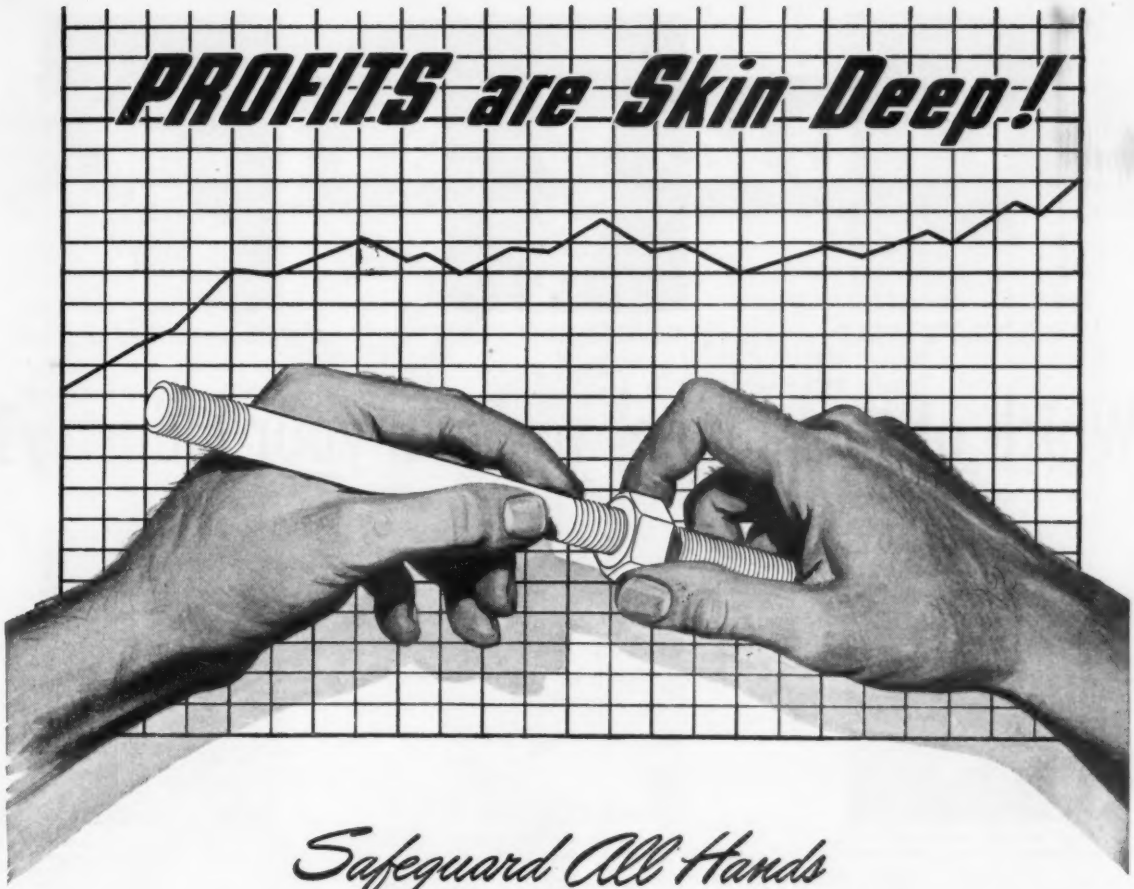
Those old Chinese spectacles were really GOGGLES, because they were made of plain crystal and simply shielded the eyes. So the wise old Chinese were the first to say "Wear Your Goggles."

That's the message, in many forms, which features Stonehouse "Goggles" and "Eye Hazard" Signs, shown in our catalog No. 8. It's free on request.

Stonehouse SIGNS, INC. Stonehouse Bldg. • 9th at Larimer • Denver 4, Colorado
MANUFACTURERS

"Stonehouse Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS



Safeguard All Hands

with WEST LAN-O-KLEEN HAND CLEANER...

(contains protective lanolin)

Up or down? Which way your profits go may depend on your production efficiency. That means vigilance against the man-hour losses resulting from industrial dermatitis. Here's where WEST LAN-O-KLEEN HAND CLEANER proves invaluable—for it gives your work-hands good protection against the costly effects of various skin irritants.

A quick-acting, thorough cleaner—LAN-O-KLEEN contains no harsh ingredients or excessive alkali. Prepared of a fine cornmeal base, it effectively removes deep-rooted grit, soil and grime—yet it's *gentler* on sensitive skins. Nor is that all! LAN-O-KLEEN is *super-fatted* with a *higher percentage* of soothing, beneficial *lanolin* than are *ordinary* super-fatted soaps. Impregnated into LAN-O-KLEEN by an exclusive process, this lanolin has been proved to have a retarding effect upon the defatting action of soap. As a result, the skin gets added protection against natural oil-losses.

LAN-O-KLEEN, in powder form, is dispensed through an economical soap dispenser especially designed for the product. Numerous plants have made it a wash-up standby. We'll be glad to show you how your plant can profit by it.

SEND FOR FREE SAMPLE

WEST DISINFECTING Company

42-16 West Street,
Long Island City 1, N. Y.

WEST DISINFECTING COMPANY
42-16 West Street, Long Island City 1, N. Y.

Gentlemen:
Please send me a free sample carton of LAN-O-KLEEN.

Name_____ Position_____

Company_____

Address_____

City_____ State_____ 14

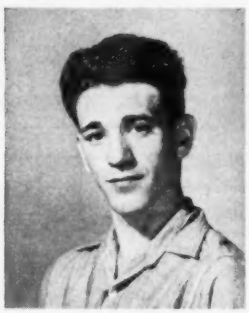
Edward De Rocco, Aircraft Inspector,
Thom McAn wearer for 15 years.

George White, Shipyard Acetylene Burner,
Thom McAn wearer for 18 years.

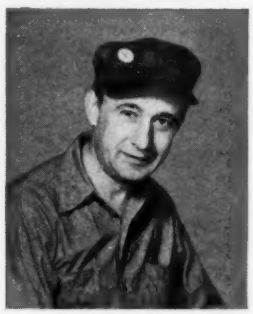
George Burd, Foundry Casting Finisher,
Thom McAn wearer for 15 years.

Which of these men works in your industry?

Walter W. Schild, Machinist Foreman,
Thom McAn wearer for 26 years.



Robert Aulon, Electrical Worker,
Thom McAn wearer for 17 years.



Frank De Marinis, Crane Operator,
Thom McAn wearer for 7 years.

IN EVERY INDUSTRY . . . MORE MEN WEAR THOM McAN THAN ANY OTHER SHOE

Pictured here are six working men. They're typical of the millions in every industry who make Thom McAn America's largest selling shoe.

Preference like that makes Thom McAn popular on the job, too. Workers wear Thom McAn Safety Shoes *willingly* because they know the long wear, the safety . . . and especially the money-saving price!

Thom McAn popularity is contributing to a higher percentage of foot protection, better safety records in plant after plant. Write for details of Thom McAn's convenient 4-way plant service—and see what Thom McAn can do for *your* plant's safety record.

SOLD 2 WAYS

1. Sold Direct to Plants
2. Stocked for your men in Thom McAn stores.

Write for full details of Thom McAn Store Service and Plant Service Plans.

THOM McAN SAFETY SHOE DIVISION
25 West 43rd St., New York 18, N. Y.

Thom McAn
A DIVISION OF MELVILLE SHOE CORP.

MORE MEN WEAR THOM McANS THAN ANY OTHER SHOE

PROVED AND APPROVED

New CESCO CUP-TYPE GOGGLES

CESCO Chippers Goggles • Number 545-C, with brown thermoplastic cups, shown above. Well ventilated and equipped with 50 mm Super-Safety Lenses.

FEATURING... *The COMFORT-KING Headband—holds goggles firmly with 30% less tension. Made of round molded rubber—will not kink, curl or twist. No buckles or sharp edges. Instant adjustment to any head size.*

CESCO Chippers Goggles • Number 545-T, with transparent cups. Well ventilated, equipped with 50 mm Super-Safety Lenses.

CESCO Welders Goggles • Number 545-W, with 50 mm Cescoweld and cover lenses.

Job-Tested and Worker-Endorsed where constant use is required

• CESCO's new development in cup-type goggles increases wearer comfort and assures greater worker safety. These CESCO goggles have the "feel" of lightweight goggles, yet give all the protection good cup-type goggles must provide.

CESCO goggle cups are engineered to fit both left and right eye areas snugly, yet gently. Broad contact surfaces and correct balance eliminate pressure spots. COMFORT-KING Headbands provide the right firmness to hold the goggles comfortably in correct position.

If your workers are not yet wearing the new CESCO Cup-Type Goggles, order them now. Use will prove their advantages to you.

New CESCO CATALOG

Tells you where to use, how to use, and how to select industrial protective equipment. Be sure to have this safety guide. Write for your copy.

CHICAGO EYE SHIELD CO. • 2308 Warren Boulevard • Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

LEHIGH

takes the simmer out of summer safety

STOCK NO. **1615** { WIDTHS A and B / C, D, E, EE — SIZES 6 to 12 / 5 to 13

You won't have to twist any worker's arm to make him wear ***this*** safety shoe! The upper is made with hand-woven leather strips that actually "breathe in" cool air . . . pump out warm air every time you flex your foot! Yet there's plenty of stamina in these husky leather soles . . . ***all Lehigh's regular protection*** in the dependable Lockrim* steel toe box. Put a pair on display near your time clocks and watch your men snap them up for double duty in the plant and out!

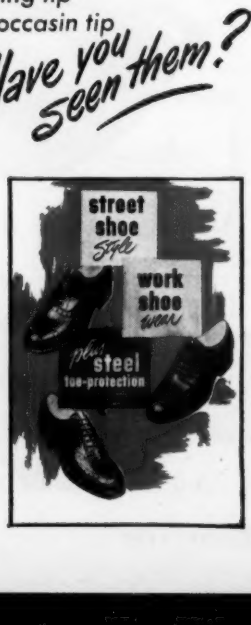
Other Lehigh "Executives"
with Straight tip
Wing tip
Moccasin tip

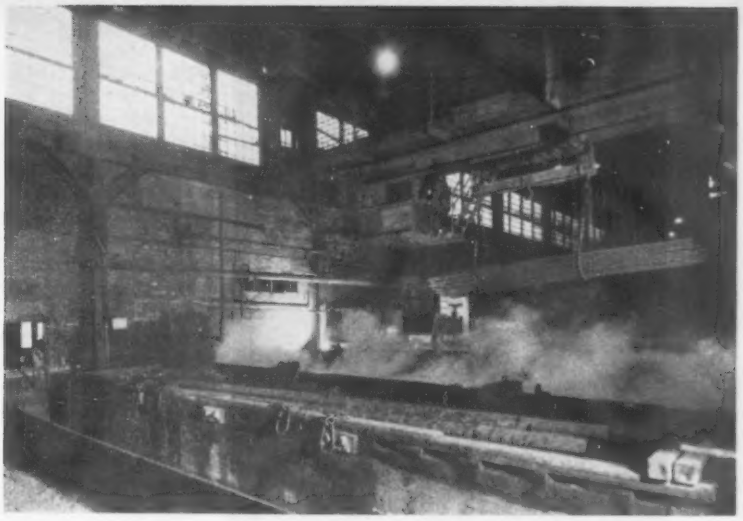
Have you seen them?

*T. M. Reg.

LEHIGH
Division of the ENDICOTT JOHNSON CORPORATION
SAFETY SHOE COMPANY
ALLENTOWN, PA.

FREE! **Send today for any quantity you need of this foot-safety-poster showing the NEW type of safety-dress shoes. 12 x 18. No advertising.**





Fog once filled the shop. Now vapors are kept close to vats.

JONES & LAUGHLIN ELIMINATES SHOP FOG

COMBUSTION engineers at the Aliquippa Works of Jones & Laughlin Steel Corporation have found a way to "de-fog" the mill's pipe pickling and galvanizing shop. They use four large air heaters which create a warm air "blanket" in the area immediately above acid dipping vats and reduce the condensation rate of vapors.

In the past, condensation of vapors rising from ten 3000-gallon tanks, charged with heated acid, during cold weather had so obscured visibility that it became necessary at times to stop production. A craneman in his cab 18 ft. overhead could not see the floor and workmen had to grope their way through the dense atmosphere.

The pickling solution in the 25-ft. long tanks is heated to about 180° F. by steam. When hot pipes are lowered in 5-ton bundles by overhead crane into the vats for the descaling process, more heat is added to the liquid. As the rising vapors met the overlying layer of cold air, they condensed and a murky fog resulted. The building was unheated except for a few small gas- and coke-fired salamanders. Cold air entered through a constantly open truck door and infiltrated through other apertures. Although the fumes are non-toxic because an inhibitor is used in the solution, the fog did constitute a safety hazard and slowed operations.

In their study of the situation, J&L engineers decided the logical answer would be to increase the temperature of the air over the tanks so condensation of the vapors would be reduced. The problem then was how to accomplish this result economically. Holding sufficient heat over the tanks seemed to be difficult without warming the entire mass of air in the mill type structure. The building is 325 ft. long and 50 ft. wide. Height to the bottom of the truss is 36 ft., with an additional 10½ ft. to the bottom chord of the monitor roof. The monitor is 15 ft. high with louvered openings forming its sidewalls. In such a building, warm air tends to rise rapidly and is lost through the roof. It was not possible to install any heating equipment over the tanks because it would interfere with crane operations.

The equipment selected by J&L to solve the problem is a development of Dravo Corporation, Pittsburgh. Four "Counterflo" heaters, each having a capacity of 2,000,000 Btu per hour, were installed in metal lean-to sheds outside the south wall of the pickling shop. Each heater handles about 22,000 cu. ft. of fresh air per minute. The air supply is handled by a fan assembly in the base of and integral with the heater. Turning on a single shaft, the fans are powered by an electric motor mounted on a hinge arrangement to provide continuous adjustment of the V-belt drive. The motor is in the air stream and is kept cool.

Fresh air flows first over two staggered banks of "economizer tubes" with inside swirlers. In these tubes, the hot combustion gases are cooled and their heat is utilized before they are vented. The exhaust fan is mounted on the same shaft as the intake fans and pulls gases through the tubes to cause negative pressure in the combustion chamber.

After the fresh air passes over the economizer tubes, it sweeps the heater's stainless steel combustion chamber and then is discharged into the pickling shop at a velocity of approximately 2000 ft. per minute through wall openings 12 ft. above the floor. Only six of the 13

(Please turn to page 40)

Before

Pouring paint mix into "pony" without benefit of dust control.

After

Same operation with dust control unit in operation.

EXPOSURES IN THE LEAD PAINT INDUSTRY

by W. L. WILSON, Chief
Bureau of Industrial Hygiene
Cleveland, Ohio

IN THE PAST few months, a careful study was made in the paint industry in Cleveland to determine the exposure of workmen to lead pigments in order to evaluate the seriousness of this potential health hazard.

It is not our desire to overemphasize the seriousness of lead exposure, because not many men are exposed to dangerous concentrations and the problem is less extensive than it was a number of years ago. Nevertheless, for those relatively few workmen who are exposed to dangerous amounts of lead, the results may be just as serious as in the past. The principal exposures to lead dust occur when loading mixers, when handling bags of lead pigment, either full or empty, and from dust on the person, clothes, floor, etc.

What Is Lead Poisoning?

The symptoms of lead poisoning may occur when excessive quantities of lead are being circulated in the body. This often may be the result of one of three causes:

1. Large single or infrequent doses of lead causing acute symptoms.
2. Continuous or frequent absorption of lead which is in excess of the quantity which can be excreted by the body, with the excess either being circulated and causing chronic lead poisoning or stored in the bones.
3. Release of stored lead from past exposure into the circulatory system due to changes in body reactions caused by illness, overindulgence, diet or other reasons.

Who Uses Lead?

Fifty-one plants known to be manufacturers of paints of various kinds were visited, 35 of which use lead in appreciable quantities. Most of the plants made relatively little lead paint compared to their total output; however, even in the plants that mixed lead paints only on rare occasions, it was discovered that a hazard due to lead existed. It was very difficult to actually see this operation in all of the plants where lead paints were made in small quantities. Many of these plants were very cooperative and either made special mixes or notified us when their next batch was to be mixed so that the operation could be observed. A total of 16 plants were visited where atmospheric samples were taken in the breathing zone of the workmen and analyzed for the quantity of lead present. A summary of these tests is described later in this report.

Some Alibis

Through conversations with various plant superintendents and officials of the plants visited, it was found that there was quite a difference of opinion regarding the seri-

ousness of exposure to lead. While some may not have minimized this seriousnes, there were others, either officials or workmen, who have ignored the existence of this hazard. In order to convince the skeptics, some of the erroneous beliefs are discussed:

1. They had never heard of any lead poisoning cases in their plant in recent years or at any time.
2. They did not use much lead.
3. They used only leaded zinc.
4. The only way lead poisoning occurred was through eating lead and inhaled dust would not cause harm.
5. Lead dust is heavy and does not get into the air.

There may be some reasons for some of these statements, but facts found in previous studies by experts in the field of industrial medicine generally contradict them. While it may be perfectly true that no disabling lead poisoning cases were known to exist in a particular plant, this does not mean that cases have not existed or do not exist at the present time. Repeated exposures to lead may result in a varying amount of the lead being retained in the bone even though there had not been enough present in the general circulation to give any symptoms of lead poisoning that would be easy to recognize by a layman. It is possible that this accumulation in the bone might never cause any noticeable discomfort or illness to the individual and part of it may gradually be discharged from the body. It is also entirely possible that much of the lead might be released from the bone and suddenly go into general circulation with unfortunate results due to some unpredictable reaction in the body as discussed previously. In the past year, just such a case did occur where a workman, who apparently had been perfectly healthy, suddenly became ill and died within a few days due to acute lead poisoning. With this in mind, it does not seem logical to believe that lead exposure is not a potentially serious hazard just because no cases of lead poisoning are known in a particular plant. One of the reasons why more lead poisoning cases have not been detected is that periodic medical examinations with sufficient laboratory assistance have not been available.

The amount of lead used by the paint industry at the present time seems to be only a fraction of what was used in the past. In some plants this does reduce the exposure of the workers to a very short time, perhaps only to several batches a month. This means that the total amount of lead likely to accumulate in the body is much less than if more batches were mixed, but nevertheless there may be some accumulation. It is also quite possible that if the price of lead is substantially reduced, much more lead paint will be made.

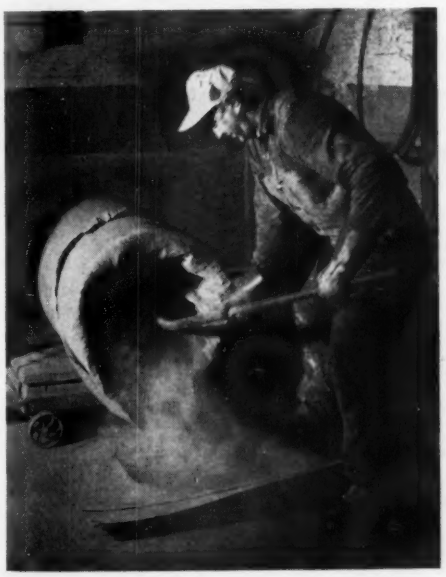
It is probably true that some forms of lead are more readily absorbed by the body than others, possibly due to their solubility in the fluids. It does not seem reasonable to assume that 35% leaded zinc is less hazardous than lead carbonate simply because there is less lead per bag. As a matter of fact, the form of lead in leaded zinc is believed to be much more soluble than lead carbonate.

Lead poisoning may be caused either by ingestion (swallowing) or by inhalation. In the past, some industries did not realize that inhaling lead dust was harmful and relied entirely on preventing the swallowing of lead to control their cases. It was not until they controlled their dusty operations that they gained complete control of the situation. The human body may absorb much more lead when exposed to inhalation of dust or fume than by ingesting the same amount. In controlling the hazard, both of these methods of exposure must be considered.

Lead dust is probably about twice as heavy as many of the other pigments used in the paint industry and during emptying of the bags, sometimes very little or no visible dust was observed. The particles were so small that they were not visible unless in large quantities or clumped together to form large particles. The result of the air analysis showed that although there was very little visible dust in the air, there still was a large amount which could be determined by proper laboratory tests.

(Please turn to page 35)

Dust control apparatus disconnected to show how color pigment creates dust hazard.



Before

After

Same operation with control unit in place. Note absence of dust.

The life and times of Careless Cal

Portrait of the Author

(CHAPTER 2) Courtesy Southwest Airmotive Co.

(Cartoonist William Harper, now with Advertising Enterprises, Dallas, Texas, originated "Careless Cal" while a student at the University of Texas.)

YE OLDE YANKEE *Clipper*

or

Hank 8 Rides Again

No one can ever accuse me of being all thumbs. How can I be all thumbs when I only have one thumb? If you will look carefully at the picture, you will discover my other thumb doing an Immelman, due north of my head. The book of directions which came with the gimmick I'm using described it as being a "Paper Cutter." Nothing, absolutely nothing, was said about it also serving as a Meat Axe.

This illustrates one of the inadequacies of modern mass production. Had the Paper Cutter factory really been interested in the public welfare, it would have sent a representative to me personally. Between sips on our Zombies and nips on preserved jumping beans, he would have said to me, "Cal, this Paper Cutter, also cuts thumbs, billy goats' whiskers, and the tops off tomato cans". Had I known this, I wouldn't have been dreaming of myself as Henry the 8th chopping off Ann Boleyn's head.

Anyway, there should be an easier way to do this job. Isn't it possible to buy paper, already cut and done up in neat, little perforated rolls?

HOW TO GET *Electrocuted* TO OFFICE

or

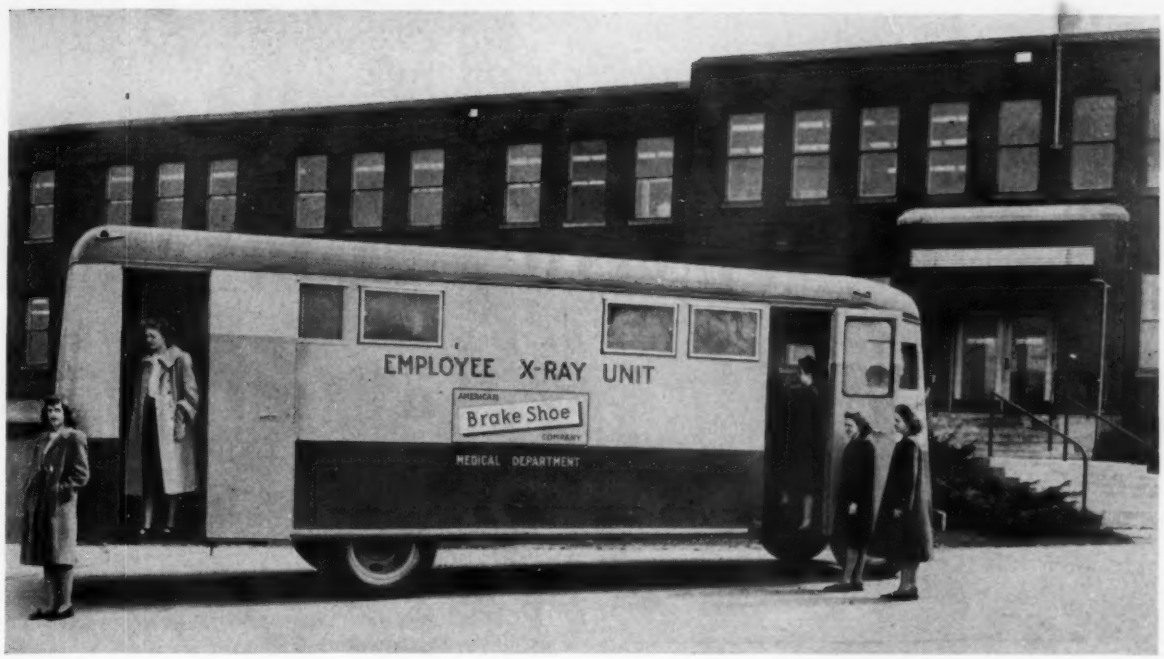
A Volt For Me Is A Volt For Me

This portrays one of the most shocking episodes of my professional history. I have always been something of an electrician and, when the juice got short-circuited down to the hangar the other morning, I took things in hand and started in to make repairs.

"Why," I asked myself, "Bother the company electrician?" I had just seen him on the sofa in a Grumman Mallard, peeling an orange, and didn't want to make him so nervous he'd squirt seeds all over a customer's airplane.

In order to keep cool, thinking perhaps there might be a crisis in the offing, I showered myself at the drinking fountain, strolled nonchalantly over to the bum wiring and reached in to make a cursory inspection. They tell me that, after the power company's rescue squad had revived me, I cursoried plenty. Words I had no idea I knew.

Excepting a slight purplish hue to my skin, three fingers which vanished into thin air, a limp, and something of a stutter, I suffered absolutely no ill effects. Remarkable, what?



By { **Lowering Overall expenses—**
Increasing Speed and Efficiency—
Boosting Employee morale, and
Exposing T.B. and Silicosis, this

MOBILE X-RAY UNIT PAYS OFF

HOW the benefits of periodic chest X-ray are being brought to its 10,000 employees scattered throughout 60 plants in 23 states and Canada was recently disclosed by officials of the American Brake Shoe Company.

After six years' trial of mobile X-ray apparatus, employing a knock down 14 x 17" film X-ray unit transported in a station wagon, the company recently went all the way, acquiring a G-E X-Ray Corporation photo-roentgen bus especially designed for mobile survey work in the fight against TB.

The reason for this, according to L. E. Hamlin, M.D., Medical Director, was to cut film costs and boost speed and efficiency through the use of miniature (4 x 5" single-frame) film, and to take advantage of the marked psychological effect produced among employees by the sight of the attractive, specially-equipped bus. During the first visit of the bus to a plant recently employees would linger around after work to watch the unit in operation; in fact one or two lined up X-rays before the unit was ready to operate.

By psychological effect is meant not only boosting morale and company loyalty but also further increasing the already high participation among employees in the surveys at each plant.

Use of the new bus offers several advantages over the hauling of a transportable unit throughout the country. Besides the gain in efficiency and cost-reduction already mentioned, there is also the elimination of setup and disassembly time; the provision of darkroom facilities right in the bus itself; and the elimination of danger and expense of moving valuable equipment around by hand. Cost of the fully-equipped bus was $20,000.

According to Dr. Hamlin, where the company formerly felt lucky if it could survey 10 plants a year, it will now be able to cover at least half of its 60 plants in the same period (doing a complete survey of all employees in each), thus more than tripling its original capacity to safeguard the health of its working force. Eventual aim is to survey each plant 100% once a year.

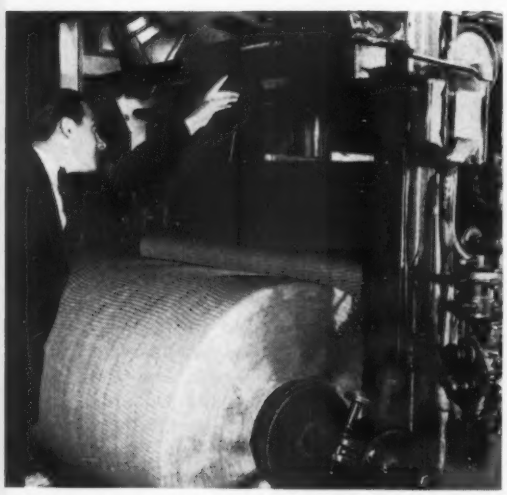
The task of conducting the surveys is handled by one technician who drives the bus, takes and develops the films. Thirty-two nurses stationed in the various plants aid him in setting up the surveys.

American Brake Shoe Company handles the periodic examination program, but for pre-employment examinations it refers employees to local industrial physicians who render regular medical service to its plants.

All medical records of employees are filed at the Medical Department headquarters in Chicago. In plants having full-time nurses, duplicate records are kept in the First Aid Department. In both cases, the

(Please turn to page 38)

FIRE PREVENTION EQUIPMENT at Firestone



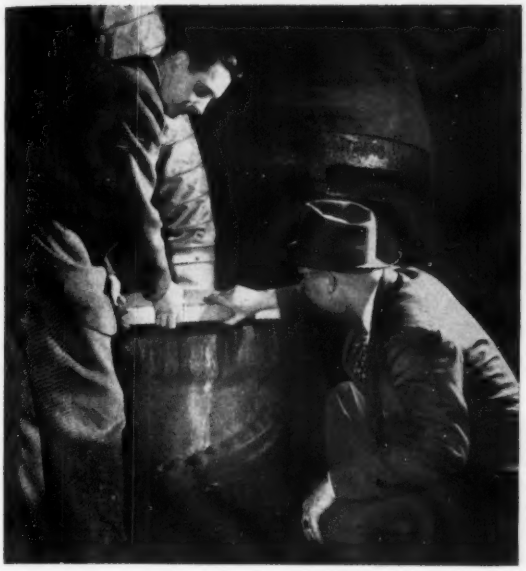
This spreader machine impregnates nylon fabric with rubber cement at The Firestone Tire and Rubber Company plants in Akron, Ohio. Because the cement contains a large percentage of solvent, the operation would be quite hazardous were the entire machine not well protected against fire. As prevention of the hazard, the unit is protected by an automatic carbon dioxide gas system. Harold Field of the Firestone Insurance Department points to a heat-actuated device of the dipping end of the unit. Besides the stationary carbon dioxide equipment, portable carbon dioxide equipment is also provided at strategic points near the unit for hand fire-fighting purposes. This equipment has been in action and each time extinguishment was rapid.

Gum dipping machines of the Firestone Tire and Rubber Company, used for dipping fabric in rubber, are protected against fire possibility from static electricity by a static eliminator. Fireman John Patterson points to the eliminator at the point where the fabric leaves the rolls. The eliminator is wired to the frame of the machine, which in turn, is grounded.

FIRE prevention engineers of The Firestone Tire and Rubber Company are constantly working to provide protection for employees, machinery, materials and property. They study every operation where there is a possibility of fires starting through static electricity, spontaneous combustion or other causes, and they work on designing or procuring equipment to prevent such fires.

Ordinary fires are guarded against with water-cooling devices. In cases such as the reclaim rubber dryer in the Xylos Rubber Company plant in Akron, where there is danger of fire from overheating of rubber, protection is assured by an automatic live steam smothering device. Heat-actuated devices pick up any rapid rate of temperature rise, transmit the impulse to a special device which releases live steam into the dryer. For additional protection, fire-fog nozzles which discharge finely divided water into the dryer are also provided.

Flammable liquid and gas fires are



A special ventilating system was designed for the devulcanizers at the Xylos reclaim plant. The dust system removes the vapors and lint from the inlet through which the raw materials are placed in the machine. The ducts for removing the unwanted materials are protected by heat-actuated devices which release water into the ducts in case of fire. Harold Field (left), Insurance Department, and George Glass, Xylos engineer, inspect the installation.

These four 50-pound cylinders furnish carbon dioxide for the automatic fire protection system on the spreader machine used by The Firestone Tire and Rubber Company for impregnating nylon fabric with rubber cement.

FIRE PROTECTION FOR INDUSTRY SECTION

extinguished by smothering. Dry chemical extinguishers which contain materials to cover these fires are provided where flammable liquids and gases are located.

Electrical fires are prevented by carbon tetrachloride or carbon dioxide extinguisher systems which are non-conductors of electricity.

Every one of the 365 days of the year is a day of vigilance against fires in the Firestone plants. However, special emphasis is placed on the subject of fire prevention once a year when the Company's Plant Protection Division stages a fire demonstration. During this demonstration the most up-to-date equipment and fire-fighting methods are shown to members of the Fire Department, members of supervision and employees who serve as volunteer firemen in the different plants. Members of the Akron City Fire Department are also invited.

The accompanying photographs show some of the special equipment used in the Firestone plants for fire prevention.

Wheeled dry chemical extinguishers have proved very efficient in extinguishing butadiene and styrene fires at the Synthetic Rubber Plant operated by The Firestone Tire and Rubber Company. Dry chemical in the cylinder is forced through the hose by nitrogen pressure. Doyle C. Everhart, fireman, demonstrates one of the extinguishers.

CONFESSIONS OF **FELIX FIRE**

By HECTOR ZEMBEE

"Hector Zembee" is actually M. B. Zerwick of the Public Relations Office, The Yale & Towne Mfg. Co. Cartoons by Ed Randall, New York artist.

SO you want to know about Fire! Well, ask me, Felix Fire, the hottest shot this side of—you know where—the place that rhymes with well.

I'm Felix Fire, the meanest, nastiest, dirtiest trouble-maker ever let loose to bother innocent people. And when I say dirty, it's not only because I despise water.

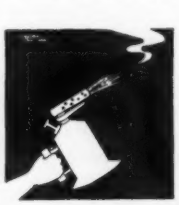
Let me tell you about myself. I ain't particular where I set things blazing, or how I start, or what the consequences are. All I want to do is to burn. Anything: hotels, houses, barns, schools, theatres, factories. Give me half a chance just to get started and there's no telling what damage I can do. I'll burn down the place you work in and burn you out of jobs.

No smoking

Well, as long as I'm giving it to you from the shoulder, I might as well tell you the whole truth: I'm out to burn up what I can, any way, any place, any time. I got plenty of friends who are in there helping me in the most innocent ways. As a matter of fact, half the times they are so innocent, they don't even know what they're doing. Did I say innocent? Maybe I mean dumb.

Joker

Take the people who smoke. The more of them, the better I like it; but the ones I like the most are the careless ones. You see them everywhere, — the guy who throws a lit cigarette butt around, especially near inflammable materials—the joker who tosses a lit butt into a waste basket—the small fry who dumps out the hot heel of a pipe all over the place without thinking about the live embers—and the small-brain who flicks a burning match through the air without even bothering to see if it's out or where it lands. Boy! all those guys are my pals. Although it hurts me to admit that a person like me has to rely on half-wits and dumbbells.



Dumbbell

I don't want you to get the impression that such characters have a monopoly on carelessness. They got plenty of buddies. Take some of the fellows who work with torches—any kind of torches, acteylene or ordinary gas torches. Most of those guys are right on the ball and know the moment they give me an inch I'll grab a yard. But some of them! Boy, they're real pals. They just let the sparks fly anywhere, and are they surprised when I suddenly burst out all around them.

It reminds me of a time in one factory where an empty-headed guy starts working a portable hand grinder — you know, one of those emery wheels—right inside the lacquer room. Wham! Bang! Before anybody knew what was happening, that whole lacquer room was one mass of flame. That was me, Felix Fire, running riot. I forget how many people were killed.

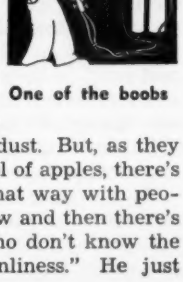
Empty head

I'm on the prowl all the time. Mostly I wait for the boobs to make a wrong move in or near lacquer rooms, the shipping rooms, the packing rooms, the carpentry shops, or any of the places where inflammable materials are kept. Just one little break is all I ask for—a spark from a torch or grinder, a lit match, a live speck of tobacco, anything like that—and the rest is just gravy for me.

You can gather from this that my real pals are carelessness and stupidity. That's true even when they put the blame on spontaneous combustion! Boy! what a fancy name that is for something a fellow ought to be ashamed of. Spontaneous combustion don't stand a chance when the boys and girls are on their toes and when they keep the plant clean.

Take it from me, I'm always waiting for the right conditions for this spontaneous combustion. Every time I see one of the boobs—I mean one of my pals — stuff oily rags in a wooden box, I begin to sizzle. All over the plant there are metal receptacles for oily waste. But the boobs don't use them. They say to themselves, "This spontaneous combustion is a lot of malarchy," and every time I hear them say that, I just rub my hands and wait. Suddenly, a big surprise! Where there was nothing but a wooden box of oily rags, there is now the nicest, hottest fire you ever saw, and it's me Felix Fire running wild again.

Same thing happens with dust. I mean plain, ordinary dust, every day variety dust. The stuff accumulates in motors and even in the pipes of the dust-ventilating system itself. All the boys and girls have to do to put the quietus on me is to follow the rules of cleaning away dust. But, as they say, in every barrel of apples, there's a sour puss. It's that way with people, too. Every now and then there's some character who don't know the meaning of "cleanliness." He just



One of the boobs

lets the dust pile up in a motor or in a shaft, and is he surprised when a fire starts.

"Gee, I wasn't even smoking," he says.

That's right. He wasn't smoking. But by not cleaning away the dust, he was helping me as much as if he put a match to a pile of straw.

Yes sir. I'm taking my hair down, just to let you in on the secret life of Felix Fire.

Halfwit

I don't want to name names, but among my best pals are the boobies who do the wrong thing when I begin to burn. Take the guy who spots me just as I got started. Instead of following the rules, and I don't stand a chance against the rules, this guy begins to scream on the top of his voice, "Fire! Fire!" That's music to my ears. For then anything can happen: panic, riot, mayhem and destruction.

I know the rules by heart, with my eyes closed and hands tied behind my back. That's because it's always good strategy to know your enemy; and the rules are my enemy.

Small fry

I'll even give you the rules, free of charge, right off the cuff. If you see me get started, that is, if a fire breaks out, call your Foreman at once. If you don't reach him immediately, call the switchboard operator at the plant and state clearly the location of the fire. If the fire looks bad enough, ring the nearest fire alarm box. That means you should know where it is and how to use it. You should also know the location of the nearest fire extinguisher.

Members of the Plant Fire Department will be notified at once.

All other employees must keep out of the way of the Fire Fighters so they can put me out—that is extinguish the fire—without serious delays.

If necessary, the Captain of the Fire Fighters will call the Stamford Fire Department.

Unless you are one of the Fire Fighters, don't turn on the water or use the hand hose. This is especially true in the Die Cast and Plating De-

(Please turn to page 38)

EXPERIENCED ENGINEERING DEVELOPS NEW, QUICK-ACTING FIRE EXTINGUISHER

TESTS

and more TESTS!

tests

Now ready!

C-O-TWO
DRY CHEMICAL TYPE
FIRE EXTINGUISHER

Test after test, changes, improvements, simplifications . . . now the new C-O-TWO Dry Chemical Type Fire Extinguisher is ready, having features that make it one of the most efficient, fool-proof, easy-to-use fire extinguishers known.

SELF-CONTAINED UNIT... no extra gadgets protruding or complicated operating instructions . . . a real down-to-earth fire extinguisher that does a highly efficient job.

C-O-TWO DRY CHEMICAL IS FREE FLOWING . . . no syphon tubes or valves within the cylinder to become clogged or inoperative . . . special dry chemical formula developed to ensure proper flow . . . discharge hose and nozzle remain empty until fire extinguisher is actuated.

TWO CONVENIENT SIZES to fit your fire fighting needs... 20 pound capacity and 30 pound capacity . . . both engineered for fast, positive action the instant fire strikes.

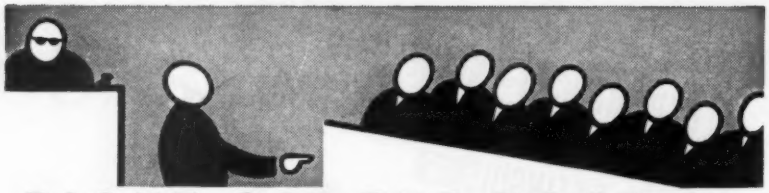
APPROVED . . . Underwriters' Laboratories, Inc. rating is B-1, C-1. C-O-TWO Dry Chemical is non-conducting, non-corrosive, non-freezing and non-toxic . . . highly effective on flammable liquid and electrical fires.

ON-THE-SPOT RECHARGING... no special tools needed... C-O-TWO Dry Chemical for recharging is sold in handy pre-measured 20 and 30 pound sizes as well as in a 50 pound bulk size . . . all sizes packed in durable moisture proof containers.

Act now for complete free information on our newest contribution to modern fire fighting . . . just clip this advertisement to your letterhead or calling card and mail today . . . no obligation.

C-O-TWO

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 • NEW JERSEY
Sales and Service in the Principal Cities of United States and Canada
AFFILIATED WITH PYRENE MANUFACTURING COMPANY



RIGHT OFF THE DOCKET

Employer Sues Attending Doctor

JAMES G. MITCHELL brought an action against Dr. Capen Peaslee, Jr., a practicing physician for mal practice. It is contended that claimant as the result of an accident while employed by a local lumber concern, broke the radius on his left arm, at the wrist and that the Defendant herein was called in as attending physician and through his negligence in only applying splints and no cast, the broken bone did not knit properly or remain in normal position. The displacement was not corrected when the splints were removed and permanent partial loss of the use of the arm resulted.

Defense raised the issue that the claimant had prosecuted against an employer and its insurance carrier a petition for compensation under the Workman's Compensation Law and obtained an award of specific compensation and finally secured a lump sum settlement, both of which were paid. It is stipulated that if the Plaintiff's action is barred by the compensation, recovery judgment shall be entered for the defendant, otherwise the case stands for trial.

Under the compensation act of the State of Maine, where compensation was paid to the employee, the employer would be subrogated to the rights of the injured employee to recover against any third person. Upon the failure of the employer or compensation insurer in interest to pursue his remedy against the third party within thirty days after written demand by a compensation beneficiary, shall entitle such beneficiary or his representative to enfoce liability in his own name.

Under the statute an employee injured by reason of an act of a third person other than his employer, does not lose his right to maintain a common law action for damages when he accepts compensation, but his right to enforce the liability in his own name is suspended until the employer, vested by subrogation with the injured beneficiary's right of action, fails to pursue its remedy for thirty days after written demand or waives the right. Failure to bring suit within the thirty day period after demand or waiver of its right of action by the employer, reinvests the employee with his original right of common law action and thereafter he alone he can pursue it.

Since the employee in the instant case failed to give his employer the written notice required under the statute that the employer maintain an action against the doctor, the claimant is not entitled to go forward in a suit filed and the case declared a non-suit.

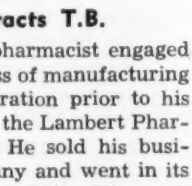
Action in common law disallowed until statute compiled with.

Mitchell -vs- Peaslee, Supreme Judicial Court of Maine, December 13, 1948, 63 Atlantic Reporter, Second Series, Page 302

Employee Contracts T.B.

VOGT was a pharmacist engaged in the business of manufacturing a chemical preparation prior to his employment with the Lambert Pharmacal Company. He sold his business to the company and went in its employ in June of 1943. His work there consisted of continuing the manufacture of the preparation he had been making and doing experimental work on other chemical mixtures.

In September of 1943, he was assigned the task of assisting in some work on a water purifying compound known as S. C. I. This was a mixture of potato starch, potassium nitrate and 10% succinchloromide. The ingredients were in powder form and Vogt operated the mixing machine and compressor which placed the compound into tablet form. One of the machines used to compress the tablets was hand operated and as it was in use, some of the mixture would spill. Some of the various powders were spilled at times in the weighing and mixing process and some of the succinchloromide was in the air as it was passed through the sieve.



Succinchloromide contains about 26% chlorine and it is irritating to the nose, eyes and throat when it is in the air in sufficient quantity. Those working near Vogt stated that when he was employed on the formula they could smell chlorine and it made them sneeze and cough and caused their noses to run.

Vogt worked on this project intermittently over a period of several months, having put in approximately 116½ hours in connection with his work with the compound known as S. C. I. During this period the powder that spilled or got in the air caused his nose to run, made him cough and caused a burning sensation about his face and nose and shortly after he started working on S. C. I. tablets, he began to cough at night. His illness was diagnosed as tuberculosis.

The claim was made on the theory that Vogt had suffered an injury and was entitled to compensation. The company contended that recovery should have been under the occupational disease amendment of the Workmen's Compensation Act. Tuberculosis was concluded not to be an occupational disease but an infectious disease which is attributed to bacilli and a person in any occupation might become afflicted with it.

Since there was no other claim other than tuberculosis, an award was properly made under the Workmen's Compensation Act rather than under the theory that claim should have been predicated upon the occupational disease amendment. It is true that an occupational disease may terminate into tuberculosis in which event the employee's ultimate condition should be considered in fixing the amount of compensation. However, in this case no disease other than tuberculosis was asserted.

It was concluded that an "accident" within Workmen's Compensation Act may consist of an event, a single occurrence, or of a series of occurrences, resulting in injury.

Vogt vs. Lambert Pharmacal Co., et al St. Louis Court of Appeals, Miss., March 15, 1949

218 South Western Reporter, Second Series, Page 788

Meningitis vs. Lead Poisoning

JOHN ODELLO was a lead burner by trade. According to undisputed

evidence, his death was immediately caused by Fibrinopurulent meningitis, which was sustained as the result of injury arising out of and in the course of his employment, consisting of lead poisoning which proximately resulted in his death.

Controversy in the case centers upon the evidence concerning meningitis and lead poisoning and their relation to each other. As stated by the physician, meningitis is a disease caused by a variety of organisms of varying virulence. In some forms of it, total fatality is expected, regardless of the condition of the infected person; in others there may be a recovery if certain weakening conditions do not exist. Lead poisoning where lead exists free in the blood stream, may cause an anemia which facilitates the fatal effectiveness of meningitis.

The autopsy disclosed considerable deposits of lead in Odello's bones and kidneys, but as his body had been embalmed before the examination of it, no determination could be made regarding the exact organism which caused death. In addition thereto because of the embalming, it was impossible to ascertain whether there was any lead in the blood stream at the time of death. The physicians who testified in regard to the cause of death were unable to state definitely that Odello had lead poisoning, but said it could not be ruled out as a possibility.

It is argued that since the evidence showed at most a "possibility" of lead poisoning, the Commission's finding and award is based on speculation and conjecture. By adequate medical testimony to support the award made by the Commission that Odello was suffering from lead poisoning at the time he contracted meningitis and that such poisoning was a material and contributing cause of death, the Court upheld the Commission and allowed recovery as the claim arose out of and in the course of the employment.

Travelers Insurance Company vs. Industrial Accident Commission, et al, Supreme Ct. of California, March 23, 1949

203 Pacific Reporter, Second Series, Page 746

Abrasion Results in Infection

CLAIMANT knocked the skin off his left hand while grinding a chopping-cleaver in the course and scope of his employment for the Oak Crest Provision Company; that thereafter the hand became infected, causing a secondary condition his physicians diagnosed as Weil's Disease, and that such abrasion of his hand had been the portal-of-entry for the germ of the disease thereafter so termed "Weil's Disease".

There is no question from testimony by his wife that after the incident, that claimant came home with the skin torn off his left hand; and his physician testified that he had seen such an abrasion when he first examined the claimant.

The claim is resisted under the theory that the cause of his disability, an infection classified as Weil's Disease, was contracted from an animal or object under the control and in the possession of the claimant, nor that there was any casual connection or relation between such injury and such disease and that the burden of proof was on the claimant to indicate that the poisonous infection resulted from and was traceable to the work or character of the business of the employed.

Court concluded that the employee did not have the burden of showing that the infection originated in his

Headrest Goggles W-50 with Filter Lenses for Gas Welding, Cutting, and Brazing

Type WR-50, same as W-50 but with Elastic Head Band

Eye injuries amount to about one-third of industrial accidents. Yet with proper precautions 90% of these can be prevented. All too many seem to be gambling on their good luck—and with disastrous results. Far better to follow the recommendations of safety experts and choose the right protection for each job.

For Gas Welding, Cutting, and Brazing, **Jackson Headrest Goggles type W-50 are light and easy to wear, with or without prescription glasses, are simple and easy to adjust, easy to raise and lower. Goggle assembly is hinged from headrest with telescopic arms, held gently against the face by concealed springs. Spring clips hold arms to headrest to provide added adjustment and easy replacement. Headrest is of light, easy to clean plastic, adjustable for size. Plastic eye cups are easily fitted to the face. Outside of each cup has ventilating screen to prevent fogging and baffle plate to keep flying particles and light rays out. 50 mm. glass lenses are available in standard shades from 3 through 6, and have cover glasses to protect them.**

Sold only by distributors and dealers in the U.S. and Canada. Write us for information.

Headrest Goggles G-50 with Clear Lenses for Chipping and Grinding

Type GR-50, same as G-50 but with Elastic Head Band

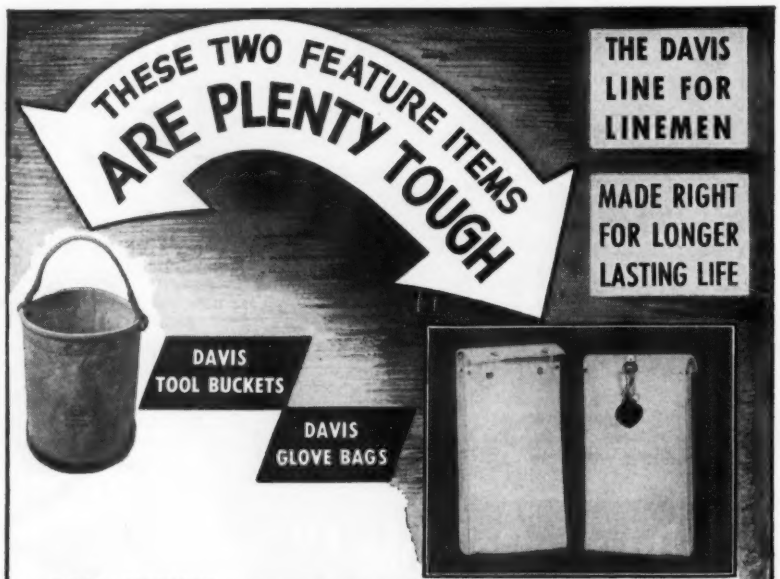
JACKSON
PRODUCTS
WARREN · MICHIGAN

SAFETY GOGGLES · SPECTACLES · EYESHIELDS

employment, as long as the proof indicated that an accident did arise during the course of his employment resulting in injury, as in this case the abrasion of the hand, it was determined that the infection entering the wound was pecularly incident to the work or character of the business.

The fact that he may have come in direct contact with some infectious or poisonous matter, although such poisonous matter be not traceable to the work or character of the business of the employe, did prove a recovery. Employee did receive an injury to his hand while in the course of his employment and a secondary condition resulting in Weil's Disease from infection which entered into the hand which was injured, sufficiently, gave rise to right to recovery.

Biers vs. Fort Worth Lloyds et al, Court of Civil Appeals of Texas, Galveston, March 3, 1949
219 South Western Reporter, Second Series, Page 493


THESE TWO FEATURE ITEMS
ARE PLENTY TOUGH
THE DAVIS LINE FOR LINEMEN
MADE RIGHT FOR LONGER LASTING LIFE
DAVIS TOOL BUCKETS
DAVIS GLOVE BAGS

TOOL BUCKETS—Made of 18 oz. canvas in one piece. Bottoms are tough, water-proofed one piece formed leather to resist weather rot and warping. Heavy stitching stands up under tool abuse in hitting bottoms. Rim of bucket is reinforced by specially shaped, rolled fibre ring. Send for list of available sizes and types.

GLOVE BAGS—Proper size to hold any length rubber gloves and protectors without folding. Gusset sides permit carrier to be flat when empty. Two-way snap hook with D ring permits bag to be attached to belt. Made of heavy, closely woven No. 6 waterproof duck—double stitched. All seams are bound for longer life. Write for prices.

OTHER DAVIS ELECTRICAL SAFETY EQUIPMENT

SAFETY STRAPS • BODY BELTS • CLIMBERS • CLIMBER STRAPS
LINE HOSE BAGS • RUBBER GLOVES • GLOVE PROTECTORS
UTILITY WARNING SIGNS • BELT BAGS • RUBBER HATS, COATS,
BOOTS • LINEMEN'S TOOLS • BLANKETS AND HOLDERS, ETC.

SEND FOR OUR COMPLETE PROTECTION CATALOG

SAFETY DAVIS DIVISION
DAVIS EMERGENCY EQUIPMENT CO., INC.
59 Halleck Street, Newark 4, N. J.

Employees Injured On Way To Work In Company Car

THE employer, a steel barrel company, received a rush order which was an emergency or special job. An authorized employee, the foreman, directed another employee of the company to take a truck of the company and go to the home of the claimants, who were fellow employees, and bring them to the factory to work upon this special order at a time before regular working hours. No money was paid claimants for the time consumed in going from their home to the factory.

While en route, an accident occurred wherein both were injured. An action was instituted in trespass against the employer and truck driver, alleging that the driver negligently operated the company truck. This action was set aside wherein the Court concluded that the exclusive remedy under the circumstances was through the Workmen's Compensation Act since at the time of the accident they were in the course of their employment.

It is a general proposition that the liability of an employer ceases when the employee leaves the premises where he is employed, and the compensation law does not apply to an employee while going to and returning from his place of employment. There is an exception to the rule, however, where some special duty is undertaken for the employer.

The test in determining whether a case comes under the Workmen's Compensation Law is not whether the service was performed before or after hours of employment for which wages were paid, but whether the special act performed by the employee at the employer's direction was in furtherance of the employer's business. Speed in the completion of the special or emergency order was obviously regarded by the employer as a furtherance of his business in which the transportation of these employees was an integral part.

The verdict obtained from the jury in the common law action was set aside by the order of Court who ruled that the case came within the purview of the Compensation Law, and, therefore, the action in common law cannot be maintained.

Recovery could be had under the circumstances under the Workmen's Compensation Act.

Butrin -vs- Manion Steel Barrel Company, Supreme Ct. of Pa., January 11, 1949. 63 Atlantic Reporter, Second Series, Page 345

INDUSTRIAL

Accidents in the News . . .

These accidents are taken from the pages of the nations Newspapers. They've all happened—they didn't have to!

Danville, Pa., News:

Lee Edward Stump is reported as improving at the Geisinger Memorial Hospital after suffering a painful blow on the side of the face while at work in the foundry of the Kennedy Van Saun plant Monday morning. X-rays were taken yesterday and if they do not disclose a fracture, it is likely that Mr. Stump will be allowed to return to his home today. According to a spokesman from the plant, Mr. Stump stepped in the way of a fellow worker who was swinging a sledge. The worker was unable to check his swing and struck Stump on the right side of the face. He was rushed to the hospital in an ambulance.

Prevention:

This kind of accident is the despair of any safety engineer trying to build up a good accident record. Difficult to prevent, the only solution seems to be in the education of the workmen themselves in basic awareness of safety principles. No one in their right mind would deliberately step into a sledge hammer, yet such rash actions often result when the men are permitted to become careless of old and familiar hazards. It's up to the safety man to point out that the hazards are there, and for the men to watch out for them.

◆

Chicago, Ill., News:

Walter Wiessner, merchandising manager for the Continental Music Co., 630 S. Wabash, suffered a badly crushed left foot as he ascended in an elevator on his way to work Friday morning. His foot was caught in the elevator shaft at the second floor when he apparently failed to step back far enough to give it clearance. He was taken to St. Luke's Hospital.

Prevention:

If the existing codes of safety standards for elevators were complied with, the majority of elevator accidents would not happen. In this case for instance, an inner door on the elevator itself would have prevented this accident. Such doors are rigged so that the elevator can not operate unless the door is fully closed, protecting riders of the elevator from coming into contact with any part of the elevator shaft.

◆

Mena, Ark., Weekly Star:

James Lawrence, 33-year-old employee of the H. L. Trest furniture crate factory, suffered the loss of his left hand about 2:30 Thursday afternoon when he accidentally thrust his arm into a whirling saw while cleaning out shavings from a machine he had been operating. The hand was cut off just above the wrist joint. A Beasley-Wood ambulance was called and rushed the injured man to the Mena hospital for medical attention.

Prevention:

The saw, of course, should have been so guarded that it would have been impossible for this man to "accidentally" thrust his arm into it. A number one rule in any shop should be to shut off any kind of machine before attempting to clean it.

◆

Passaic, N. J. Herald-News:

An 18-year-old sign painter, Stewart-Wallace, died in Beth Israel hospital after a scaffold on which he was working broke in half, dropping him to the sidewalk three stories below. A fellow worker escaped serious injuries by catching hold of a rope and dropping to the roof of the building above which they were working. The two men, employees of Federal Advertising Corporation, were at work on a beer sign atop the two story Wilkinson Building. Detectives said the scaffold, both the back rest and foot walk, were broken in two, but the suspension ropes were intact. *The scaffold, a 22-foot ladder with slats on the rungs for a walk, appeared to be in poor condition, they said.*

Prevention:

The use of standard scaffolding and not the use of makeshift rigs! Even stages designed for scaffolding work should be subject to regular inspections to ascertain whether they are safe. Ladders, odd planks, etc., should never be used for above-ground work.

◆

Beaumont, Tex., Journal

R. Roy Setliff, manager of the rice drier for the American Rice Grower's association, was treated at Hotel Dieu Friday for lacerations of the head, sustained when he ran into an air duct at the plant. He was admitted about 7:45 a.m. and dismissed after emergency treatment and X-rays, according to hospital attendants.

Prevention:

Overhead installations should be placed so that they do not create an obstruction hazard to persons walking about the floor below. If it is impossible to move such installations out of the danger zones, the ingenious safety engineer will rig up warning devices that will protect workmen in the area. One plant faced with this problem has rigged up a device similar to that used by railroads to warn employees of low clearance such as bridges, tunnels, etc.

Useful Literature

UL-1 . . . Walter G. Legge Co., Inc., have made available reprints of an important article entitled "Are Floor Cleaning Costs Too High?" This article will be of particular interest to safety engineers, plant superintendents and men in charge of maintenance programs.

UL-2 . . . The Olympic Glove Co. now have available their latest supplement to their catalog of safety work gloves, finger protectors and safety apparel. Of special interest is the new Olympic PLASTIGUARD, the only black plastic glove now on the market, according to the manufacturer. This new glove is soft and pliable, but durable. Non-slip, large size, curved fingers. Highly resistant to abrasion and to virtually all industrial chemicals, including acids, alkalis, oils, etc.

UL-3 . . . The S. G. Taylor Chain Co. offers a new 12-page bulletin on Taylor Made Alloy Steel Chain. It contains complete specifications on sizes ¼"—1-¾" diameter inclusive; working load limits, definitions and cautions, recommended use and details of chain service for Taylor Made Alloy Steel Chains, Sling Chains and Attachments.

UL-4 . . . Jackson Products Co.'s new bulletin No. 27 shows their complete line of eye shields and goggles for welding and grinding, equipped with plastic headrests as well as elastic headbands. Jackson Products Co's pocket size catalog 100 shows their entire line of insulated and semi-insulated arc welding electrode holders, welding cable fittings, eye shields and goggles, with prices.

UL-5 . . . A new 6-page catalog section on its lines of industrial fire hose has been published by The B. F. Goodrich Co. The catalog section details the methods and materials with which all fire hose of the company is constructed, and advantages of their use. It then pictures each of the brands of industrial fire hose, gives data on size, couplings and test pressures, and weight coupled and uncoupled for 50-foot lengths. Gaskets, fittings and couplings used with the hose are also described.

UL-6 . . . Specification sheet M-10S-59 describes the new standard water cooler with complete exterior of stainless steel by Cordley & Hayes. The enduring properties of this metal are particularly adaptable to long time water cooler service where severe atmosphere and humidity prevail as in the chemical, textile, paper and other industries.

UL-7 . . . Central Station Signals, Inc. have published a 22-page catalog describing and illustrating their various type alarm systems. Of special interest is the description and illustration of the Class "A" Proprietary Panel.

UL-8 . . . Klear-Vu Products Co. Inc. have available a descriptive sheet on their Safety Caps, Safety Aprons and Safety Arm Guards. Because of the design of Klear-Vu Safety Caps, one size fits all heads. Safety Aprons are made of transparent vinyl film. Transparent Arm Guards have adjustable snappers at wrist.

UL-9 . . . Onox Co. Inc.'s latest bulletin is entitled "Onox Prevents Athlete's Foot!" This pamphlet describes the Onox method of preventing growth of athlete foot fungus and lists a large number of well-known industrial plants in America who are using Onox today.

UL-10 . . . The Buffalo Forge Co. have four new catalogs available describing products which have been designed and approved within the last year. Bulletin 3137-E describes their Model C Brezo-Fin Unit Heater. Bulletin 3703 describes the new "Buffalo" Model F Air Conditioning Cabinets, manufactured in both the horizontal and vertical units in sizes from 2,000 to 22,000 cubic feet of conditioned air per minute. Bulletin 3675 describes Type "LL" Limit Load Conoidal Fans, well known in the ventilating and air conditioning field. Bulletin 975-C describes and illustrates the Buffalo Close-Coupled Single Suction Pumps. This bulletin gives complete specifications on the various sizes of these pumps.

UL-11 . . . The Wheeler Insulated Wire Co., Inc. have prepared literature describing and picturing the latest on their Wheeler Sound-Powered Intercommunications Systems. These systems require no batteries or external power source. They are rust and corrosion resistant, said to be easy to install, will ring and talk over 20 miles.

UL-12 . . . The C. B. Dolge Co., manufactures of chemicals for maintenance, have prepared a folder describing their Presto Floor Finishes, Presto Primer and Presto Finish. Of special interest to maintenance men is the fact that starting as late as 9:30 in the morning a complete seal and wax job on a floor can be done and ready for traffic by noon. Application is simple—merely spread on with a lambswool applicator, fibre mop or brush. Presto stands up for months and will resist heavy traffic indefinitely.

UL-13 . . . The West Disinfecting Co. have prepared an attractive 3-color pamphlet describing their soap and soap equipment for industrial use. This pamphlet describes soap for every industrial requirement and also includes the various type soap dispensers, West paper towels and cabinets, West Soaparatus Systems, etc.

UL-14 . . . Plasticote Glove Co. Inc. have prepared a promotion piece describing their new PLASTICOTE—plastic impregnated gloves. It is claimed by the manufacturer that these gloves are practically indestructable and have up to ten times the wear of rubber-coated gloves. They are said to be superior in tensile strength, tear strength, abrasion resistance, heat and flame resistance and resistance to harmful chemical solutions. Non-slip finish with cotton fabric base for comfort.

UL-15 . . . The National Fire Protection Association have published a 120 page pictorial manual on accepted practices for handling manually placed ladders. The manual has been prepared by a committee representing the Committee on Firemen's Training of the NFPA; The Fire Department Instructors Conference; and the International Association of Fire Chiefs, to record pictorially safe and accepted methods of handling fire department ladders. This manual, which sells for $1.50 per copy should be of particular value to safety engineers, plant fire marshals and others responsible for the training of industrial fire brigades.

TECHNICAL FILE ON TOXIC GASES AND VAPORS

SAVE THIS VALUABLE REFERENCE MATERIAL: BUILD UP A PERMANENT OFFICE FILE

D 117. INORGANIC AND ORGANOMETALLIC GASSES. All the substances in this group are thought to be toxic enough to destroy the vitality of any form of living matter which is exposed to them or to their vapors. They usually are divided into (1) the protoplasmic poisons—mercury and phosphorous; (2) the organo-metallic compounds—tetraethyl lead, nickel carbonyl, di-ethyl mercury, di-ethyl arsine, cacodyl, and cacodyl oxide; (3) inorganic hydro compounds—hydrogen sulphide, hydrogen phosphide or phosphine, and hydrogen arsenide or arsine.

D 118. HYDRO COMPOUNDS. In this division, of those not treated already in separate sections, only the third group—the hydro compounds—are considered significant as industrial hazards, and, therefore, will be given special attention. Di-ethyl mercury and the arsenic compounds (di-ethyl arsine, cacodyl and cacodyl oxide) are volatile liquids that give off vapors only slightly soluble in water. The vapors become deadly when finally dissolved in any tissues of the body, reacting with the characteristic symptoms of mercury and arsenic compounds. They do not represent frequent industrial hazards in themselves.

D 119. HYDROGEN SULPHIDE. Hydrogen sulphide (also known as sulphuretted hydrogen and "stink damp") is a colorless gas which in mild concentrations gives off an odor of rotten eggs, but which soon dulls the olfactory nerves so that in more dangerous concentrations it is scarcely noticeable. It is heavier than air, having a relative density of 1.19. It is soluble in both water and alcohol, but like most soluble gases it is released when heat is applied.

D 120. INDUSTRIAL USES. The gas is present in the metallurgy of iron, copper, gold and silver, and in the purification of both sulphuric and hydrochloric acids. It is a reagent in analytical chemistry, is used in extracting cellulose, and is present in the making of artificial silk, plastics, starch, matches, transparent wrapping paper, certain dye intermediates, some soaps, leather, and in gas purifying, sugar refining, refining of oil and petroleum, and in vulcanizing rubber. Hydrogen sulphide also is present as a by-product of the decomposition or decay of organic matter, which explains the odor. Thus, other hazards may be present around coke ovens, paper pulp processes, fat rendering, fertilizer, glue and soap works. Miners, gypsum workers, ore burners, blast furnace workers (or residents near the mills) may be exposed to the gas in the form of a by-product.

D 121. HYDROGEN SULPHIDE POISONING. Poisoning from hydrogen sulphide can either be acute or chronic. Most cases of the *acute* poisoning are caused by accidental leaks of the gas, carelessness in handling or in entering enclosed spaces, such as vats and sewers, where the gas may have accumulated. Being heavier than air, the gas will always be present near the bottom of a dead air space.

D 122. ACUTE CASES. Acute poisoning may come on quickly and without warning, as the rotten egg odor is noticed only in milder concentrations of the gas. Large quantities of the gas, over 1 part per 1000, act as a general poison, causing paralysis of the respiratory system, coma and rapid death, if rescue is not prompt and efficient.

D 123. TREATMENT. When a worker is overcome by the gas, rescuers should remove him to open air immediately, but should be protected themselves as in all noxious gas emergencies by gas masks or air-line helmets. Although breathing is paralyzed, the heart may continue beating for ten minutes after the attack, and artificial respiration should be started at once and continued until the doctor or ambulance arrives. The victim must be kept warm and hospitalized even if he appears to recover quickly and loses his cough. There is danger from pneumonia, or from drowning due to fluid in the lungs at any time from twelve to forty-eight hours later. Any recovery usually is complete.

D 124. CHRONIC POISONING. Because this gas acts both as an asphyxiant and a toxic irritant, *chronic* poisoning from exposure to small concentrations over prolonged periods is possible, even though the poison is considered non-accumulative.

D 125. SYMPTOMS. Dangerous signs are the smell of gas, smarting of the eyes or "pink eye," headaches, dizziness, a persistent cough and a tightness or burning in the chest. Other signs are cramps in the leg muscles, mental depression, failing memory, weakness, sweating and skin irritations, such as frequent boils. Such disorders usually are transient and can be treated according to symptom after the victim is removed from the exposure.

D 126. PREVENTION. In preventing hydrogen sulphide poisoning there must not only be a general awareness, both by the workers and the supervision, of the possible presence of the gas, but the warning program must include information on its deadly effects and the control program must keep concentrations within safe limits. The American Standards Association has a standard of 20 parts of the gas per million parts of air for the eight hour work shift. The prime factor in control of the exposure is the installation and careful maintenance of proper enclosing or ventilating equipment to take care of the gas at the source. Air

TECHNICAL FILE ON TOXIC GASES AND VAPORS

tests should be made frequently. For all emergency work in exposures, as in storage rooms or sewers, all workers should be under the constant supervision of an outside assistant and both should be supplied with an air-line respirator and rescue harness. Fully trained first aid squads can minimize fatalities.

D 127. PHOSPHINE. Phosphine (or hydrogen phosphide or phosphoretted hydrogen) is a colorless, spontaneously flammable gas with a disagreeable, garlic odor. Like other phosphorous compounds it is dangerously toxic. It is only slightly soluble in cold water and not at all in hot water. It is heavier than air, having a relative density of 1.146.

D 128. INDUSTRIAL APPLICATIONS. It is used in marine buoy flares, but is also present as an impurity in acetylene and various ferro-silicons. Workers exposed include acetylene workers, blast furnace workers, buoy makers, ferro-silicon workers, phosphine workers, phosphorous extractors, red phosphorous makers and welders.

D 129. PHOSPHINE POISONING. Phosphine poisoning can occur when work room concentrations are above 7 parts per million during the work period (limit suggested by the U. S. Public Health Service). Being only slightly soluble, the gas gets down to the deeper tissues before it reacts dangerously and then it affects largely the nervous system.

D 130. SYMPTOMS OF EXPOSURE. Its acute action is said to resemble that of food poisoning, and breathing in large amounts of the gas is said not only a painful shortness of breath, but severe headaches, ringing in the ears, bowel disturbances, weakness, nervous tremors, convulsions and death. The *chronic* form takes on the symptoms of phosphorous poisoning. The presence of phosphine apparently does not alter the blood so that after prompt rescue from exposure the treatment can be according to symptom with a fairly good possibility of complete recovery. Control of this hazard is similar to that outlined for hydrogen sulphide. The smell of garlic should be a feared danger sign.

D 131. ARSINE. Arsine (or hydrogen arsenide, arseniuretted hydrogen, arsenic tri-hydrate, arsenious hydride, arsonia) is an extremely toxic colorless gas. It is soluble in water up to 20 cubic centimeters in 100 grams of water. It is heavier than air, having a relative density of 2.7, and has an unpleasant garlic odor, like phosphine.

D 132. INDUSTRIAL EXPOSURE. Arsine occurs whenever an acid and metal react to produce certain hydrogen molecules, which unite with any arsenic present in either the acid or gas. Workers exposed to arsenic include the following: Aniline workers, Bronzers, Dye makers, Electroplaters, Etchers, Lime burners, Refiners (metals), Solderers, Tank cleaners, Tinners.

D 133. CONCENTRATION LIMIT. Several states have suggested one part of the gas per million parts of air as a safe limit for the work period. Any work room concentration over that limit is dangerous, as arsine is considered as probably the most poisonous of the inorganic gaseous substances. Its action differs from that of other arsenic compounds in that it rapidly destroys red blood cells to such an extent that the dead cells stop up the small blood vessels and keep oxygen from internal organs such as the liver and kidneys. This action can take effect from six to thirty-six hours after the exposure.

D 134. SYMPTOMS. Early symptoms are dizziness, general weakness, nausea, vomiting and other digestive disturbances. If the dose is sufficient, prostration and death follow quickly. A jaundice shows up within the first twenty-four hours of a severe exposure, due to the low red cell count, and large doses of iron usually are administered during the hospital treatment. Any overcome worker should be rescued quickly and oxygen administered until he is out of danger from asphyxiation. Hospitalization is all-important as large blood transfusions are usually needed. Recovery usually is slow, over a period of weeks.

D 135. PREVENTION AND CONTROL. Prevention and control processes of this hazard follow those laid down for hydrogen sulphide. Any sign of a garlic odor hovering about the exposure should be reported immediately to the supervisor.

D 136. CONJUNCTIVITIS OR "PINK EYE". Conjunctivitis, or "pink eye," as it is familiarly known, is a fairly common complaint even in non-occupational life. It is caused by an irritation or inflammation of the conjuctiva or eye membrane, frequently giving a blood-shot appearance to the eye.

D 137. INDUSTRIAL SIGNIFIGANCE. In industry this occurs as a warning sign of exposure to a noxious, irritating gas, vapor or fume. It may be accompanied by smarting, and workers sometimes complicate the conditions by rubbing with unclean hands or cloths.

D 138. TREATMENT. Any eye irritation should be brought immediately to the attention of the medical department. Removal from the exposure and treatment with mild eyewashes under the supervision of the doctor generally is all that is required. In the case of deep injury to the membrane of the eye, as from acid burns, scarring can develop and permanently affect the vision. That is why immediate and ample flushing of the eye with water is important in such acute injuries.

RESPIRATORY PROTECTIVE DEVICES
AND
EMERGENCY BREATHING DEVICES

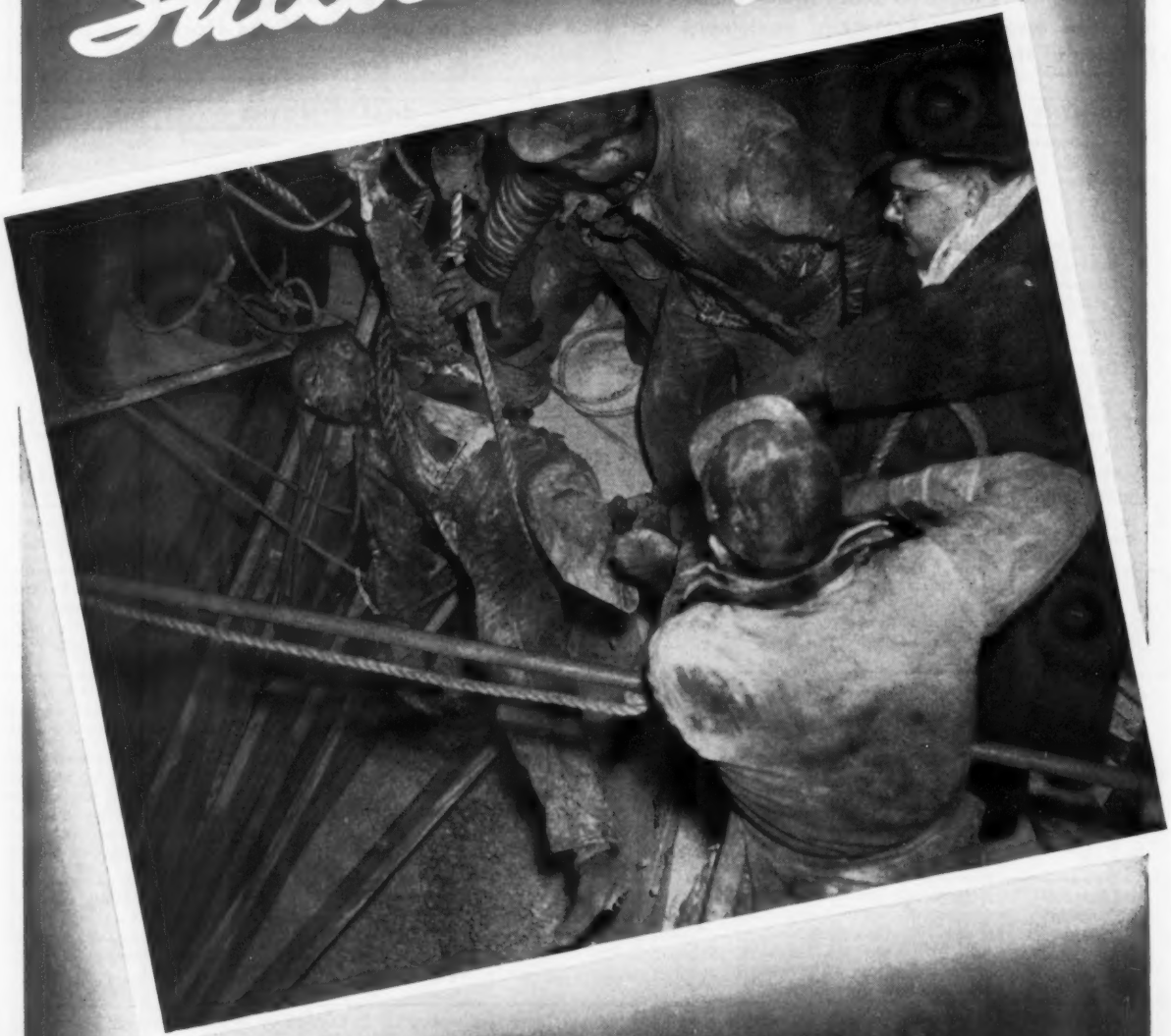
One or two of our readers have called attention to inaccuracies and omissions which they stated appeared in the chart which we published on the above subject in the June issue of OCCUPATIONAL HAZARDS. In order to thoroughly clarify the characteristics and uses of the various types of such equipment manufactured and to leave no doubt in our readers' minds, we have prepared a new chart. That portion dealing with respiratory protective equipment has been reviewed by personnel of the Health and Safety Division of the Bureau of Mines.

EQUIPMENT	USES	CHARACTERISTICS
I. Self-Contained Breathing Apparatus	Provides complete respiratory protection in oxygen deficient and in highly toxic atmospheres*. Not approved for prolonged or repeated use in petroleum vapors. Under such conditions, a hose mask is recommended.	Operates independently of surrounding atmosphere. The absence of hoses permits wide freedom of movement. Requires some training and experience in use. U. S. Bureau of Mines approved under Schedule 13C.
1. Rebreathing Oxygen Cylinder Type	Per above	Wearer rebreathes atmosphere within apparatus through regenerating chemical, thereby conserving use of oxygen from cylinder. Available with 1-hour and 2-hour capacity.
2. Rebreathing Oxygen Self-Generating Type	Per above	Wearer rebreathes atmosphere within apparatus through a replaceable oxygen generating canister. Available with ¾ hour capacity.
3. Demand-Type, using either oxygen or air	Per above	Oxygen or air supplied wearer from cylinder on basis of respiratory demand. Exhalation is to outside atmosphere. Available with ½ hr. capacity. (Also available with 10 and 15 min. capacity. Not covered by U. S. Bureau of Mines.)
II. Supplied Air Respirators **1. Hose Masks**	For use in toxic and oxygen deficient atmospheres*, particularly in tanks and other enclosed places.	Hand-operated blower approved for immediately harmful atmosphere with a full facepiece and as much as 150 ft. of hose. U. S. Bureau of Mines approved under Schedule 19A.
2. Air Line Respirators	For use in any atmosphere not immediately dangerous to life or from which the wearer can escape without the aid of the respirator.	Respirable compressed air is supplied to the facepiece through a hose of small internal diameter. Constant-flow respirator preferred for operation from plant compressed air line. Demand-flow respirator preferred for operation from cylinders. U. S. Bureau of Mines approved under Schedule 19A as Type C equipment.
3. Abrasive Blasting Masks and Helmets	Respiratory protection in sand and shot-blasting operations.	Compressed air supplied. Mask type requires 4 cfm minimum air delivery and helmet type requires 6 cfm. A complete hood protects wearer and mask from flying particles. U. S. Bureau of Mines approved under Schedule 19A as Type CE equipment.
III. Air Purifying Respirators **1. Gas Masks**	To purify the air for the wearer in limited concentrations of toxic gases*. Cannot be used in oxygen deficient atmosphere.	For use in concentrations of toxic gases not exceeding 2% by volume (3% for ammonia). Some types include mechanical filters for smoke and other particulates. Industrial models afford protection against specific gases. Universal types offer protection against all harmful vapors and gases including carbon monoxide. U. S. Bureau of Mines approved under Schedule 14E.
2. Chemical Cartridge Respirators	Respiratory protection against light concentrations of organic vapors and a few other gaseous materials. Useful in protecting against vapors present during the spraying of synthetic enamels and lacquers.	Equipment approved under U. S. Bureau of Mines Schedule 23 for protection against organic vapors only in concentrations up to 1000 ppm. Other types of cartridges are manufactured for protection against limited concentrations of other gaseous material, such as sulfur dioxide, chlorine, ammonia, metallic mercury vapor, etc.
3. Mechanical Filter Respirators	For use by workers exposed to harmful airborne particulates such as dusts, chromic acid mists and metal fumes.	Equipment approved under U. S. Bureau of Mines Schedule 21 for the following classes: 1. Fibrosis producing and nuisance dusts 2. Toxic dusts 3. Chromic acid mists 4. Metal fumes
IV. Resuscitators**	An emergency apparatus for use in sick rooms, industrial first-aid rooms, fire rescue squads, etc., to re-establish breathing and to continue the breathing function.	Has 3 distinct functions: 1. It furnishes artificial respiration when human breathing mechanism fails. 2. It supplies oxygen-carbon dioxide mixtures or oxygen to help breathing. 3. It acts as an aspirator to remove secretions from the throat.
V. Inhalators**	For emergency and oxygen therapy; some use as resuscitators, excepting that inhalators "provide" oxygen or oxygen-carbon dioxide mixtures by various means; do not "breathe" for the patient. On a non-breathing patient, artificial respiration must be used in conjunction with inhalators.	

* The use of all respiratory protective equipment is limited in that certain gases such as hydrocyanic acid will produce systemic poisoning by skin absorption, and other gases such as ammonia will produce burns, thus requiring protective clothing in addition to the respiratory protective equipment in some instances.

** The U. S. Bureau of Mines does not have a schedule of approval requirements for this type of equipment.

. . . And Sudden Injury



Using a rope sling, workmen lift man trapped in stone hopper for over four hours. The victim had lost his footing while shoveling in excess stone, fell into the hopper and was buried waist-deep. He suffered only from exposure. *(Acme)*

And Sudden Injury

Hoppers used to load materials into trucks, railroad cars, boats, etc., present a variety of hazards, most of them involving the area at the point of material discharge. It is at this point where vehicles are moved about, the hopper opened and closed and where men are more likely to be exposed to injury.

A number of accidents however, some of them resulting in fatalities, have been reported—injuries resulting from falls into the hopper itself. Pictured to the left is one such accident—though luckily this man wasn't badly hurt. These accidents occur when material accumulates on the top edges of the hopper upper opening and men are sent up to shovel the material into the hopper. While so doing they slip and fall into the hopper.

It is of course impracticable in most cases to close over the top of the hopper. For loading purposes it must remain fully open—much like a funnel. However, in order to keep such accidents at a minimum, there is no reason why a substantial railing is not erected completely around the top of the hopper. Such a railing will not interfere with loading operations, yet would be of much value in preventing men from falling into the opening. An equally important consideration in preventing slipping and falling accidents on the top of hoppers is the use of safety belts, harnesses and lines. Many hoppers tower two or three stories above ground. Men cleaning the upper edges of such a structure should be equipped with safety harnesses—not only to prevent them from falling into the hopper, but to prevent them from falling entirely off the hopper to the ground below.

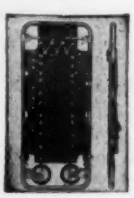
THE REVOLUTIONARY NEW ALL-PURPOSE

COLLAPSI-COT

EMERGENCY STRETCHER & TRANSFER CHAIR

Sets Up In 10 Seconds . . . Weighs Only 23 Pounds

America's finest multi-purpose stretcher. More efficient, easier to handle, easier to maneuver in close quarters. Its versatile telescopic construction permits it to be adjusted for all types of emergency carrying. Use it as a flat stretcher 75" long, or set the back rest to any angle for use as a transfer chair. Length automatically shortens as back is raised. Unsurpassed for cardiac cases. Sets up in 10 seconds. Weighs only 23 lbs.



Size opened, 75" x 20". Size collapsed, 48" x 20" x 2¼". Folds to a compact lightweight unit, easily stored on walls. Tested and proved far better in actual use, Collapsi-Cot will prove a valuable addition to your first aid equipment. Write for details, now!

EMERGENCY AIDS COMPANY

3628 N. Lincoln Avenue • Dept. O-H • Chicago 13, Illinois

Hot Mold Handlers **mitts**

SAFEGUARD No. 14730

We built these one finger mitts especially for handling hot molds, and a lot more hot things too. We make them from horsehide split . . . no other leather can stand the gaff so well. And on hot jobs, this specially tanned horsehide is far less likely to harden, shrink and split. *These mitts LAST.*

At the same time, they're flexible, comfortable to wear, don't have to be broken in. The wool lining keeps out heat, keeps hands cool. Jumbo size makes them easy to put on, take off, gives hands plenty of ventilation. Palm seam and heel of hand have extra reinforcement.

They are well made one finger mitts. Manufactured with 2 inch cuff (No. 14883), 4 inch gauntlet (No. 14730), 6 inch gauntlet (No. 14844). Also available in glove and mitten styles. Sizes for both men and women.

Write for catalog. We are engineers and manufacturers of a complete line of safety clothing. Tell us your requirements.

Industrial
GLOVES COMPANY

Main Factory: 1808 Garfield St. DANVILLE, ILL.

(In Canada: Safety Supply Co., Toronto)

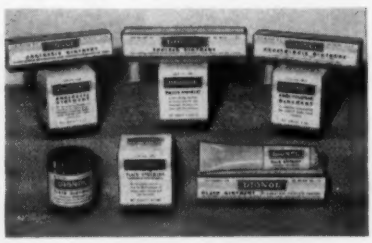
New PRODUCTS

NP-1 . . . IMPREGNATED SALT TABLETS—"Pep-Up" Impregnated Salt Tablets are now being manufactured by the United States Safety Service Co. The formula was originally developed by the Navy during the late war because it was found that plain salt tablets caused stomach distress and nausea. The new, slow-dissolv-

ing salt tablets release some salt immediately after taking but not enough to cause stomach distress. They are subjected to an exclusive patented process which forms a complete coating around each grain of salt in each tablet. This manufacturer is packaging these salt tablets for the user. Each package is a dispenser. A sturdy container of inexpensive material is used which has a built-in dispensing unit and the entire container can be attached to the wall. When empty it is discarded and replaced with a new full container.

For further information please circle NP-1 on the special postcard enclosed in this issue.

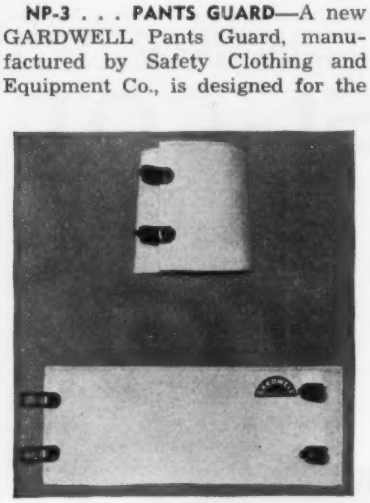
NP-2 . . . NEW PACKAGES—The Dionol Pharmacal Co. has just announced that all Dional hereafter will be marketed in beautiful new ethical packages. No change has ever been made whatever in the formulas which have been used so



successfully for many years by the medical profession and in industrial medicine. These include Dionol plain, iodized, proctologic and analgesic—ointments which melt at body temperature, releasing medicaments where contained, for almost immediate effectiveness.

For further information, please circle NP-2 on the special postcard enclosed in this issue.

NP-3 . . . PANTS GUARD—A new GARDWELL Pants Guard, manufactured by Safety Clothing and Equipment Co., is designed for the



purpose of protecting machinists and others from injury effected by getting their pants cuff caught in moving machinery or gears. It is especially adaptable for men working in steel mills. It is made from Duck material and completely encloses the pants cuff. It extends six inches up on the ankle, and is fitted with two buckles for adjustment, ease in putting on and for quick removal.

For further information, please circle NP-3 on the special postcard enclosed in this issue.

NP-4 . . . SAFETY LOCK — The Regan Forge & Engineering Co., manufacturers of crown and traveling blocks and other oil field equipment, have recently patented a new safety hook which will be readily adaptable to all applications where safety and positive couplings that are quickly releasable are needed. This new safety hook contains a simple self-locking device. A fulcrumed latch finger closes the opening into the hook and is retained in

this closed position so that it cannot be accidentally swung inward should the latching finger be struck from the outside. Suggested uses are, connections between cables used in hoisting equipment; safety belts utilized by firemen or by workmen engaged in the erection of pole or tower supported electrical equipment and the like; logging, hoists, cranes, towing couplings, well drilling, marine, elevators, aviation equipment, cable lines, etc.; baggage hooks, belt hooks, harness hooks or window washer hooks.

For further information, please circle NP-4 on the special postcard enclosed in this issue.

NP-5 . . . WELDING GOGGLE — More strength and less weight are features of a new welding goggle with cups of duPont nylon plastic now being manufactured by Willson Products, Inc., manufacturers of personal safety equipment for in-

dustrial use. In addition to light weight, the goggle has other comfort features, including rolled edges to reduce pressure around the eye sockets, adjustable leather bridge and headband to assure perfect fit, exclusive triangular lenses for extra wide vision and screened indirect ventilating ports which admit sufficient air to prevent fogging, but keep out dust and flying particles. The goggle is also available with direct ventilating ports and clear, impact-resisting lenses for chipping and other heavy-duty work.

For further information, please circle NP-5 on the special postcard enclosed in this issue.

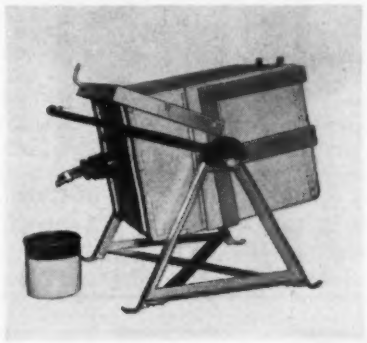
NP-6 . . . SAFETY BLOCK—MAGLINER Magnesium Safety Blocks have recently been introduced by Magline, Inc. These specially-alloyed extruded Magnesium Blocks are used in metal forming presses as a safeguard to men working within the opening of the press. They are available in any required lengths and in three sizes to cover a wide range of press capacity. Certified and permanent strength properties insure 100% safety to the workmen. Extreme light weight, correct shapes for best press application, high unit strength and maximum resistance to shock loads are additional features which make these blocks an improvement over conventional wood or steel blocks.

For further information, please circle NP-6 on the special postcard enclosed in this issue.

NP-7 . . . ANTI-SLIP FLOOR POLISH—A new product that permits hardwood floors and gymnasium floors to be polished to a high sheen that is non-slip and exceptionally resistant to scuffing and traffic wear is now being produced by the Walter G. Legge Co., Inc. Called TRAFCO, it is a solvent-type non-slip floor polish specially formulated for wood floors. TRAFCO is designed to present a continuously high coefficient of friction to inhibit slips and falls. Buffing gives it an attractive sheen that is more non-slip than before buffing.

For further information, please circle NP-7 on the special postcard enclosed in this issue.

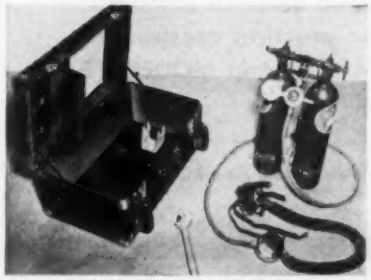
NP-8 . . . SAFETY CARBOY TILTER—The Thompson Mfg. Co., Inc. now have on the market a Safety Carboy Tilter designed for faster, safer, easier pouring of acids from any size carboy. Long and dependable service is assured by structural steel supporting members with welded and riveted construction. Positive clamping mechanism securely grips



any size carboy, holding it firmly through repeated pourings. Because of the safety ratchet control it is not necessary to return the carboy to an upright position after each pouring. It can safely be left just above the flow line, saving time and effort — especially when several small containers are being filled in succession. Air vent pouring spout assures a smooth flow of acid with no spurts or splashes.

For further information, please circle NP-8 on the special postcard enclosed in this issue.

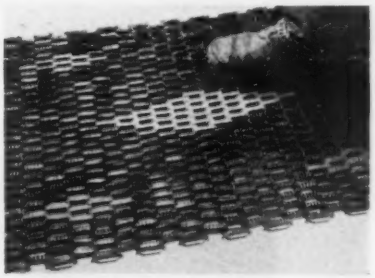
NP-9 . . . OXYGEN INHALATOR—A new model of the Scott Oxygen Demand Inhalator is announced by Scott Aviation Corporation. The Type "B" model provides a com-



pletely self-contained "package" for more effective and greatly simplified administration of oxygen. Using two "D" Cylinders (95 gal. capacity), it is furnished with oronasal mask, 6 foot extension hose, wrench, valve key, and instructions, completely ready for use. Securely retained in a sturdy carrying case, this unit is easily attached to larger cylinders for service of longer duration. All Scott Oxygen Inhalators are now equipped with a control providing, in addition to the time-proven Demand Flow, a constant flow at low pressure, "at the touch of a button."

For further information, please circle NP-9 on the special postcard enclosed in this issue.

NP-10 . . . SAFETY MAT—The General Scientific Equipment Co. are manufacturing corrugated mats made of especially compounded rubber links woven on 12 gauge spring steel wire to provide sure, comfortable footing to stop slipping accidents and reduce worker fatigue. AKRO-Mats are particularly adapted for use where moisture, oils, animal fats, acids, chemicals, solvents



and abrasives are apt to be on the floor as the rubber resists deterioration. They are easy to clean and easy to handle, lay flat or roll up.

For further information, please circle NP-10 on the special postcard enclosed in this issue.

NP-11 . . . COATED COTTON WORK GLOVE—A new coated cotton work glove which has many advantages over synthetic rubber or other plastic gloves, according to the manufacturer, in its chemical resistance properties, has just been put on the market by The Milburn Co. PLYGLOV, the trade name for this new glove, will not crack or peel; does not become slippery when immersed in oil, water or solvents; and is water, acid, caustic and petroleum solvents proof. The manufacturer claims that on comparable jobs, PLYGLOV will outwear 10 pairs of

cotton or 4 pairs of synthetic rubber gloves.

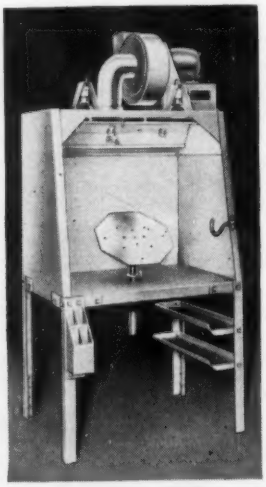
For further information, please circle NP-11 on the special postcard enclosed in this issue.

NP-12 . . . CHIPPERS' GOGGLE—A new chippers' goggle, compression-molded of an extremely strong and durable phenolic compound and featuring dome metal side screens, is announced by American Optical Co.

The domed side screens provide a greater cup area for cooler, safe ventilation and more side vision, while the phenolic frame is non-flammable, moisture and heat resistant, assuring better facial fit and maximum protection plus wearing ease. The individually molded, non-reflecting eyecups have larger, rounded, face-contacting edges and will withstand considerably more impact than conventional goggles.

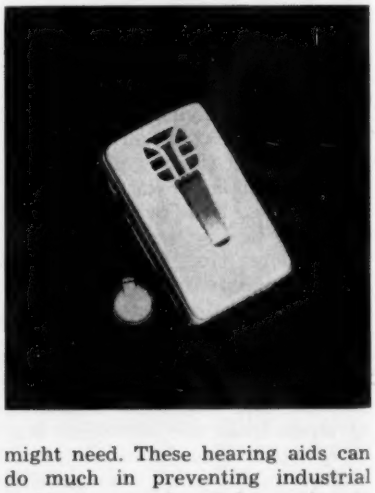
For further information, please circle NP-12 on the special postcard enclosed in this issue.

NP-13 . . . VENTILATED WELDING CABINET — The Ruemelin Mfg. Co., manufacturers and engineers of sandblast and dust collecting equipment, have designed a combination welding table and fume collector especially recommended for bench work. Standard cabinet size, 36 in. wide by 28 in. deep and 70 in. high overall, important features of this ventilated welding cabinet include controlled ventilation, convenient for operator (designed for left-hand or right-hand service) rotating table, inexpensive to install and arc glare protection provided for other workers by the cabinet wall. This welding cabinet is equipped with built-in electrode racks, tool storage shelves, insulated hanger for rod holder, powerful electric spotlight, etc.

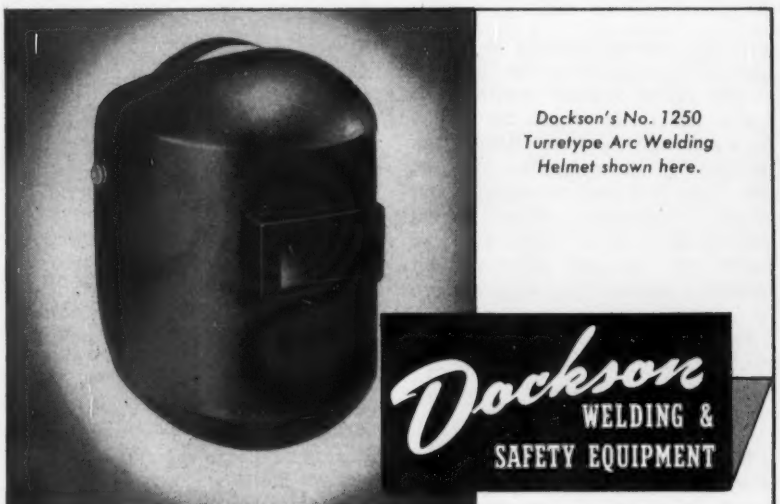


For further information, please circle NP-13 on the special postcard enclosed in this issue.

NP-14 . . . HEARING AID — The Beltone Hearing Aid Co. announce manufacture of the new Beltone Mono-Pac Hearing Aid with the "magic silver circuit", said to be smaller, lighter, clearer, and more powerful than any of their previous hearing aids. Exclusive with Beltone is their new fitting discovery, the Selectometer, which permits the Beltone consultant to help the potential wearer to choose with ease and confidence which one of 144 possible hearing corrections he might need. These hearing aids can do much in preventing industrial accidents caused and happening to persons who are hard of hearing.



For further information, please circle NP-14 on the special postcard enclosed in this issue.



Dockson's No. 1250 Turretype Arc Welding Helmet shown here.

Dockson WELDING & SAFETY EQUIPMENT

You get service-plus from DOCKSON "Better Built" Welding and Safety Equipment. Selected materials, experienced engineering and practical construction give you the BEST PERFORMANCE and MODERATE COST.

There is a DOCKSON distributor near you. Name on request.

Write for catalog of complete Welding and Safety line.

DOCKSON CORP. • 3839 Wabash • Detroit 8, Michigan

USE SPECIAL POST CARD BOUND IN THIS ISSUE FOR NEW PRODUCT INFORMATION

CAN ASPHYXIA STRIKE WORKERS IN YOUR PLANT?

Crushing accidents . . . severe electrical shock . . . heart attacks . . . heat suffocation . . . monoxide poisoning . . . smoke suffocation . . . drowning . . . and other forms of asphyxia can strike down workers in your plant no matter what you make. Industrial experience has shown that accidents involving asphyxiation can occur despite the most carefully laid safety precautions. And when a worker stops breathing, time and death will not wait for haphazard rescue efforts.

SAVE WORKERS LIVES COMBAT DISABILITY with an E & J RESUSCITATOR

YOU HAVE A RESPONSIBILITY to protect your workers from asphyxial hazards, to prevent loss of man-hours, and to minimize company liability for death or injury.

YOUR BEST PROTECTION when asphyxia strikes is the automatic resuscitation action of an E & J Resuscitator. This life-saving instrument breathes for those who are unable to breathe for themselves. Through a face mask it introduces oxygen into the victim's lungs and exhales for him. Because it automatically adjusts itself to lung capacity, the E & J Resuscitator is as safe for a baby as it is for your strongest worker. It is light and durable . . . one person can carry . . . operates on its own oxygen power . . . is easy to use. See for yourself why this safe, efficient instrument is considered essential equipment by industries, rescue squads and hospitals the country over. Send coupon below or write for a demonstration. There is no obligation to buy but you owe it to your company to see the resuscitator in action.

E&J *The Breath of Life*
. . . RESUSCITATOR-ASPIRATOR-INHALATOR

E & J MANUFACTURING CO.
GLENDALE 1, CALIFORNIA

To: E & J MFG. CO., Glendale, Calif.
☐ Please arrange an E & J Demonstration.
☐ Please send complete E & J literature.
name .....
title .....
firm .....
address .....

The sampling was done only during the time required to empty bags of lead carbonate or leaded zinc and not for the full mixing period. The workmen were considered to be careless when they routinely dropped the bags on the floor or mixer, or shook the bags too vigorously. The variation in the length of time required to empty the bags was sometimes due to the speed of the worker, but more often because of the procedure of waiting some time between the emptying of the bags.

Are Conditions Good Or Bad?

The concentrations as reported in Table I must be interpreted in terms of the exposure of the workmen. The maximum allowable concentration for lead in the State of Ohio is 0.15 milligrams of lead per cubic meter of air during an eight hour workday. This means that over a day's time a workman should not breathe in more lead dust than could be retained on the head of a pin. In addition to the exposures where samples were taken, the workmen were exposed to residual air borne dust remaining in the air after completion of the operation, and may be exposed to variable quantities while handling empty bags. The quantity ingested is difficult to determine because of the variations in the personal cleanliness of the individual and also the sanitary facilities of the plant. It is to be noted that the concentrations listed are all in considerable excess of the maximum allowable concentration, but in no instance was the exposure time continuous and, therefore, adjustments should be made. In interpreting the results the two most important factors are the concentration of lead in the air and the length of the exposure time. In about one-half of the plants the concentration was so high that a very serious condition exists regardless of the short exposure time. In the others, where the concentration was lower, the seriousness will depend on the length of exposure which is determined by the number of batches mixed per day.

What Can Be Done About It?

Practical control methods may be classified as follows:

1. Supervised use of approved respirators.
2. Local exhaust ventilation.
3. Good housekeeping.
4. Education of workmen.
5. Medical services.

All have their good features and all have limitations so that generally a combination of all is advisable.

Respirators, if of the type approved by the U. S. Bureau of Mines for lead dust, provide good protection, if properly used. Respirators should be worn wherever there is a possibility of exposure to lead dust including the handling of bags, either full or empty, unless there is an effective local exhaust system. Only six of the plants which were visited while lead paint was being mixed had respira-

TESTS TELL THE STORY

The following table shows the results of the tests made in this study:

TABLE I

Plant Sample	*Sampling Time*	*Pounds of Lead Carbonate*	*Pounds of Leaded Zinc*	*Care in Handling*	*Mgs. Lead per Cubic Meter Air Sampled*
1	2¾ min.	750	0	local exhaust (two men)	0.39
2	7 min.	0	1,600	careful	2.0
3	3¼ min.	0	350	careful	2.12
4	7 min.	0	1,100	careful	2.6
5	15½ min.	2,150	0	careless (3 600 lb. barrels)	4.5
6	12 min.	750	0	new man, careful	4.6
7	6½ min.	50	300	very careful	4.7
8	10 min.	0	1,000	careful	5.1
9	8¼ min.	0	1,750	very careless	7.7
10	4¾ min.	400	200	fast	8.2
11	9¾ min.	0	1,650	careless	8.3
12	1¼ min.	231	0	careless (31 lb. dumped from bucket)	11.8
13		750	0		12.6
14	4¾ min.	0	1,850	two men—very careless	19.3
15	5 min.	300	150	slow (much shaking)	23.6
16	9 min.	750	0		24.5
17	6⅓ min.	300	300	very careless	25.0
18	2¼ min.	200	0	overhead canopy exhaust	48.6

tors in use. At one of these plants, the workman was given a new respirator, although several used respirators were seen in the area. These old respirators were covered with a heavy accumulation of dust and the impression was gained that the respirator was worn solely for our benefit. At another plant, the worker had a respirator on upside down so that he breathed air in through the leaks near his nostrils instead of through the respirator. At yet another plant, the workman was entirely unfamiliar with the wearing of his respirator and had it fitted so loosely that when he stooped over and was in the thickest concentration of dust, the respirator slipped off his face. After a few minutes, he removed the respirator completely in disgust. Of the two instances where respirators were properly worn, one was at a plant which previously had serious results to a worker who had failed to wear a respirator and the other was at a plant where the respirator was worn by a newcomer who was substituting for the regular mixer who was said no longer to wear his respirator. From these observations you may judge for yourself how ineffective respirators are unless the plant management exercises rigid supervision over their use and care.

Control by local exhaust ventilation with a suitable dust collector and no recirculation of air is generally considered to be the most effective method for controlling dust in the mixing operation, providing the quantity of air is adequate and the hood is of proper design and placed near enough to the source of dust. The location of the hood is very important because the dust must be captured before it has an opportunity to contaminate the general atmosphere. Exhaust systems may be portable or permanent with equally good results; which type is more advantageous to use depends upon the individual plant. Local exhaust ventilation has its limitations, the principal one being that it is impractical to provide local exhaust for handling bags except when dumping them into the mixers and, the empty bags give rise to a considerable amount of dust when handled.

Good housekeeping is most important because the dust that may accumulate on machinery or the floors will sometimes be stirred up by a workman and thus create a new exposure. Every effort should be made to prevent the dust from being spilled and scheduled cleaning by vacuum cleaner or a wet sweeping should be done frequently. Good housekeeping not only prevents some exposure, but also has a tendency to make the workmen more careful.

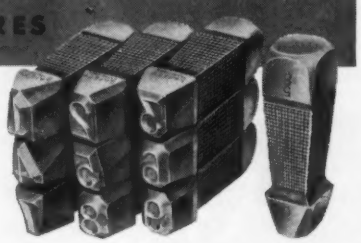
The workmen should be fully informed about the potential hazards of their work and given clear instructions on what they may do to reduce the hazard and the proper use and care of the various control methods as well as the importance of personal cleanliness.

The detection of early cases of lead poisoning or indications of lead absorption are of great value to the individual workman in protecting his health and to the plant management in detecting the most hazardous jobs. Frequent physical examinations should be given for the purpose of ascertaining the degree of lead absorption in any employee exposed to lead. This should include examination of the blood or urine for lead as well as other laboratory examinations specifically intended to aid in the diagnosis of lead absorption.

For Maximum Safety in Stamping—

"SAFETY" Wedge Grip

STEEL LETTERS AND FIGURES



- No mushroom
- No spall
- 25% to 50% more service
- More Safety!
- Pat. No. 2,089,794

Perfect balance . . . Knurled sides not only assure *positive* grip with "Wedge Grip" to give clearer, deeper impressions—but also lessen severity of extra heavy stamping. Characters available from 1/16" to 1"

Write for Bulletin J-547

M.E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

91 East Carson St. Pittsburgh 19, Pa.

Stanzoil **Black Neoprene *Impregnated* Canvas Gloves**

Low Cost Comfortable Protection

For extra-durable protective service, safety against leaks or damage by oils, acids or other harmful materials — it pays you to buy the gloves your workers like to wear — Stanzoils.

The black, neoprene-impregnated, canvas G-25 Stanzoils wear extra long in any service. Slip-proof surface aids worker dexterity, gauntlet wrist offers added protection. Stanzoil R-27's in safety red color warn workers when fingers are dangerously near moving machinery. Prevent injury claims — increase your plant's output — insist on Stanzoil Industrial Gloves. Write today for informative catalog.

Synthetic Rubber Division
The Pioneer Rubber Company
638 Tiffin Road Willard, Ohio, U. S. A.
Los Angeles, California

OVER *30 Years* OF QUALITY GLOVE MAKING

STANZOIL BY PIONEER

LITERATURE FEATURED IN ADS THIS MONTH

The publications listed below are available to readers without charge. **Simply circle on the postcard provided in this issue the number of items you wish to recieve,** and send it to OCCUPATIONAL HAZARDS, 1240 Ontario Street, Cleveland 13, Ohio. Your request will then be forwarded directly to the companies concerned.

A-1. Kirk & Blum Mfg. Co. offer three bulletins: (Dust Collecting Systems in Metal Industries), (Blower Systems for Woodworking Plants), and (Fan Systems for Various Industries).

A-2. Finnell System, Inc. offers literature on the complete line of Finnell Scrubber-Vacuum Machines.

A-3. Willson Products, Inc. offers safety posters to keep workers aware of the need for wearing goggles.

A-4. Ansul Chemical Company's File No. 406 gives complete information and latest literature together with rating charts for their various types of fire extinguishers.

A-5. Stonehouse Signs, Inc. have available their catalog No. 8 featuring their "Goggles and Eye Hazard Signs."

A-6. West Disinfecting Co. offers readers free samples of their Lan-O-Kleen Hand Cleaner.

A-7. Thom McAn Safety Shoe Div. offers information on their store service and plant service plans.

A-8. Chicago Eye Shield Company's new catalog tells where to use, how to use and how to select industrial protective equipment.

A-9. Lehigh Safety Shoe Co. have Foot-Safety posters available.

A-10. C-O Two Fire Equipment Company offers literature describing their new C-O Two Dry Chemical Type Fire Extinguishers.

A-11. Davis Emergency Equipment Co. offers O. H. readers their complete protection catalog.

A-12. Emergency Aids Co. has published literature describing the new, revolutionary Collapsi-Cot.

A-13. Catalog of complete welding and safety line available through courtesy of the **Dockson Corp.**

A-14. E. & J. Mfg. Co. have prepared literature describing the E. & J. Resuscitator-Aspirator-Inhalator.

A-15. Bulletin J-547 by M. E. Cunningham Co. describes their complete line of "Safety" marking tools.

A-16. Pioneer Rubber Co. offers an informative catalog describing their Stanzoil line of industrial gloves.

A-17. Dayton Safety Ladder Co. offers a choice of 19 bulletins on their safety equipment.

A-18. "Story of the Missing Link" has been published by Detex Watchlock Corp. as both a warning and guide to executives charged with the responsibility of plant protection.

A-19. Bulletin M-89-A describes Industrial Products Company's Highway Traffic Signs.

A-20. Olympic Glove Co. offers an illustrated catalog of safety work gloves, finger protectors and safety apparel.

A-21. Helmerichs Supply Co. offers free to O. H. readers a sample pair of their safety leg bands.

A-22. Williams Jewelry & Mfg. Co. have published a catalog of service and safety emblems which they manufacture.

A-23. Bausch & Lomb Optical Co. invite requests for their new catalog on industrial eyewear.

Here's the Handy DAYTON "ROLL-ALONG" SAFETY LADDER

IDEAL FOR THE STOCK ROOM

. . . The Dayton Roll-Along Safety Ladder with its rubber tired swivel casters can be speedily moved in any direction with practically no effort.

Safety shoes with renewable treads hold ladder permanently and safely in place while ladder is occupied.

Constructed of tested airplane spruce throughout and reinforced with steel braces for additional safety. Folds compactly for convenient storing. Available in sizes 3-ft., 4½-ft. and 6-ft.

Elevating auxiliary platform which folds back in main platform adds height if desired. These ladders are being used in many of America's largest plants. See for yourself! Write today for bulletin.

***For Safety's Sake* . . . consult our SAFETY DEPARTMENT . . . we have the complete line of safety equipment for your every requirement.**

DAYTON SAFETY LADDER CO.

2337 GILBERT AVE., CINCINNATI 6, OHIO
IN CANADA—SAFETY SUPPLY COMPANY—TORONTO

For complete information, just check any or all items listed, and send us the coupon.

MAIL NOW

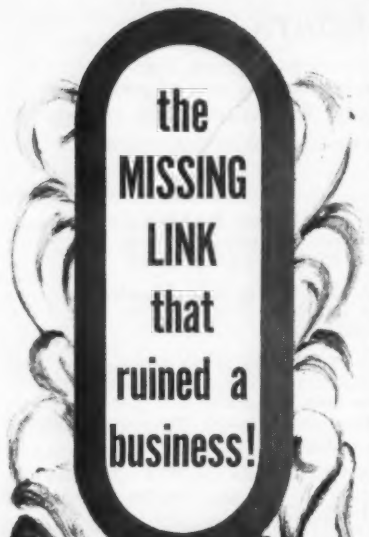
DAYTON SAFETY LADDER CO., O. H.
2337 GILBERT AVE., CINCINNATI 6, OHIO

GENTLEMEN:
WITHOUT OBLIGATION ON MY PART PLEASE SEND ME FOLLOWING CHECKED BULLETINS:

.....SAFETY LADDERS SHOES	.....SAFETY GASOLINE CANS	.....SALT TABLETS & DISPENSERS
.....SAFETY LADDERS	.....OILY WASTE CANS	.....SAFETY GOGGLES
.....SAFETY CLOTHES	.....EXCELSIOR CANS	.....GLOVES
.....ROLL-ALONG LADDERS	.....WATCHMEN'S CLOCKS	.....FIRE BUCKETS
.....FIRE HOSE	.....ACID PUMPS	.....ROCK UP RACKS
.....FIRE EXTINGUISHERS	.....RESPIRATORS AND PARTS	....."PLY"
		.....EYE SHIELDS

(Name) .....

(Company) ..... (Address) .....



This company was one of the leaders in its industry.

Its very name evoked a sense of quality and established acceptance.

Labor relations were happy. All departments functioned in creative harmony.

It employed a Watchman. It carried Insurance.

But in five hours, the work of a lifetime was reduced to a smoking shambles.

What went wrong?

If you are a management executive, you owe it to the continued security of your own company to get the answer. It may prevent a sudden and tragic occurrence in your own enterprise.

"STORY OF THE MISSING LINK" has been published by DETEX as both a warning and guide to executives who are charged with the responsibility of plant protection. Send for it. It's free.

DETEX

PATROL
ALERT
ECO
NEWMAN
GUARDSMAN

WATCHMENS CLOCKS

DETEX WATCHCLOCK CORPORATION
Dept O-8
78 VARICK STREET, NEW YORK 13, N.Y.
Sales and Service in All Principal Cities

FELIX FIRE

From Page 21

partments where explosions may occur if water is poured on the hot liquid metal or acids.

There are the rules. Simple as A B C, aren't they? Well, I'm not giving anything away for nothing. Most of the boys and girls, the careful, considerate, smart ones know the rules anyhow, and obey them. The few who don't, the boobs, nitwits, and careless ones — well, they're my pals and probably won't even bother to read the rules, no less follow them.

MOBILE X-RAY

From Page 17

records are entirely confidential. Reports on all findings are made to the employee directly. All interpretation of routine periodic X-ray films is done at the Medical Department by Dr. Hamlin and associates.

In 1947, in both pre-employment and survey-type examinations, the firm found 40 cases classified as either active or indeterminate tuberculosis (27 were found in 1946). (The indeterminates could not be proved inactive without further study.) All of these would have gone unrecognized had it not been for X-ray, Dr. Hamlin points out. Discovery of one such case alone, he adds, would have justified the entire cost of the X-ray program for that year.

No employee is discharged for pathology uncovered. In these cases, the employee is advised as to the best course of action, and special arrangements can be made through plant welfare funds, if necessary, to expedite his receiving full and adequate attention.

Besides tuberculosis, several other conditions may be anticipated, particularly among industrial workers—silicosis and siderosis (pigmentation of the lungs due to iron dust). It is important to differentiate it from tuberculosis and silicosis, Dr. Hamlin points out, since many cases of siderosis have been improperly classified. The diagnosis of silicosis must be based on "exposure to significant concentrations of respirable-sized particles of free silica over long periods of time (2 to 25 years—average 10)". It has been demonstrated, he adds, that particles over 10 microns in size

IPCO HI-WAY TRAFFIC SIGN

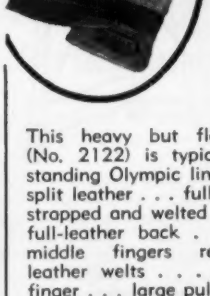
ALL METAL
•
DURABLE CONSTRUCTION
•
HIGH VISIBILITY

The ***SILENT WATCHMAN*** Standard equipment with many electric service and telephone companies . . . High visibility. 19" wide by 30" high. Folds compactly for storing. Double faced sign plate as illustrated.

Write For Bulletin M-89 A

IPCO
Safety Equipment for all Industries
INDUSTRIAL PRODUCTS COMPANY
2830 N. FOURTH STREET · PHILADELPHIA 33, PA.

PRODUCTION GOES UP!
COSTS GO DOWN!



when you protect your workers with
OLYMPIC GLOVES

This heavy but flexible gauntlet (No. 2122) is typical of the outstanding Olympic line. Best chrome split leather . . . full-leather thumb, strapped and welted . . . practically full-leather back . . . base of 2 middle fingers reinforced with leather welts . . . seamless index finger . . . large puller on cuff . . . Canton flannel lined. Remember—Olympic has a glove to fit every job!

FREE *Send for Illustrated Catalog of Safety Work Gloves, Fingers Protectors & Safety Apparel.*

OLYMPIC GLOVE COMPANY Inc.
95 Madison Ave., Dept. 16, New York 16, N.Y.

have no clinical significance since they rarely reach the alveoli of the lungs. Where X-rays indicate the possibility of occupational disease, the Medical Director discusses the matter personally with the employee.

All employees showing occupational fibrosis are X-rayed annually, whether the bus reaches their plant that year or not.

The new bus, in addition to X-ray equipment specially mounted to withstand cross-country traveling, and the darkroom previously mentioned, also has 150 feet of cable for electrical connections, thus facilitating setting up operations in any location convenient for employees.

Lead partitions, with leaded-glass windows for observation, are placed before and after the section containing the X-ray tube. Thus, the technician making the exposure at the control stand, is protected from repeated exposures, as are also employees who stand around before and after exposure.

A photo-timer, used with the equipment, automatically varies exposure time to suit the thickness of the individual chest.

The darkroom features a splash-proof developing tank; also a light-tight box for passing films in and out of the darkroom without admitting light into that room; and a 35-gallon water storage tank.

Other vital equipment includes four 100-watt heaters, safety-glass windows, a coat closet, wash bowl, fluorescent lighting, weather-proof ventilator and ventilating fan, walls and roof insulated with glass wool and covered by fir plywood interior and exterior walls, jacks to stabilize the vehicle when parked for a survey and tubular-steel welded structure providing the strongest possible construction with minimum weight.

200 Films Per Day

With an ideal setup such as this, it is possible to take as many as 300 films per day, where peak loads are encountered. However, American Brake Shoe plans to average approximately 200 daily.

American Brake Shoe Company adopted its policy of routine periodic chest X-rays in 1932 as part of an overall health-protection program. Believing that healthy, satisfied workers are one of its greatest assets, it has proven, through the current program, that when management extends itself to such an extent to safeguard health, the results greatly exceed expectations. Chest examination by X-ray are made on company time.

While this company is unusual in the number and location of its plants, the experience it has gained can be profitably studied even by smaller firms. At present a considerable gap exists between individual firms, such as American Brake Shoe, with their own bus, and the thousands of firms served sporadically via their county tuberculosis association bus. To accomplish employee protection on the scale found necessary by American Brake Shoe, industries located in one area would either have to contribute further to the support of TB association survey activity or join forces in the procurement of their own X-ray apparatus.

Rechecking

The X-ray program in industry is not only a matter of routine periodic examinations and preplacement radiographs, but also rechecking cases under suspicion. At American Brake Shoe, rechecks must be made at intervals of from 3 to 6 months. All such cases are recorded on a tickler file by the Medical Department, and the various plants are notified with regard to re-check X-rays required of certain employees.

A study of American Brake Shoe Company reveals a diversified type of manufacture not indicated by the firm's name: Six of the 10 divisions into which the company is divided are engaged in foundry operations, producing grey iron, nickel and chrome alloys, manganese steel and brass castings. The others manufacture such products as upset and drop forgings, railway switches, frogs and crossings, special alloys, automobile brake linings, paint sprayers and compressors.

The industrial hygiene program at this company, Dr. Hamlin states, is compounded of equal parts of the following ingredients, all necessary to its success:

1. Full backing is given by top management.
2. The Medical Department is responsible only to top management.
3. Full latitude of operation is permitted.
4. Financial assistance in research problems is given.
5. Attendance at scientific meetings and membership in scientific societies at the company's expense is encouraged.
6. Authority to acquire necessary

For SLOW AND NON-HEALING WOUNDS
and in Industrial
BURN CASES
use
DIONOL
Dionol Ointments melt at body temperature for almost immediate effectiveness.

Write for samples
DIONOL PHARMACAL COMPANY
Kalamazoo 11, Michigan

THE DISPENZA SAFETY LEG BAND
USED DAILY BY THOUSANDS TO PREVENT UNNECESSARY ACCIDENTS

Constructed with pure rubber and rust-proof metal clips, snugly holds workers' pant cuffs and coat sleeves around ankle and wrist.

The use of these bands has prevented costly unnecessary accidents throughout the mining, public utility, railroad, construction and steel industries for many years.

Always use "Dispenza Safety Bands" for greater safety in every industry.

A sample pair will be sent to your company without charge if requested on your letterhead.

HELMERICHS SUPPLY COMPANY
ACCIDENT PREVENTION EQUIPMENT
12207 Euclid Avenue, Cleveland 6, Ohio

ADVERTISERS' INDEX

American Optical Co. 4
Ansul Chemical Co. 7

Bausch & Lomb Optical Co. ..... Inside Back Cover

Chicago Eye Shield Co. 11
C-O Two Fire Equipment Co. 21
M. E. Cunningham Co. 36

Davis Emergency Equipment Co. 24
Dayton Safety Ladder Co. 37
Detex Watchclock Corp. 38
Dionol Pharmacal Co. 39
Dockson Corp. 34

E. & J. Mfg. Co. 35
Emergency Aids Co. 31

Finnell System, Inc. 2

Helmerichs Supply Co. 39
Hy-Test Div. International Shoe Co. 5

Industrial Gloves Co. 31
Industrial Products Co. 38

Jackson Products Co. 23

Kirk & Blum Mfg. Co. ... Inside Front Cov.

Lehigh Safety Shoe Co. 12
Thom McAn Shoe Co. 10
Olympic Glove Co. 38

Packwood Mfg. Co. 1
Pioneer Rubber Co. 36

Stonehouse Signs, Inc. 8

West Disinfecting Co. 9
Williams Jewelry & Mfg. Co. 40
Willson Products 6

1933 SCM

JUST ONE OF THE 1933 SERIES

STOCK EMBLEMS

1933 Series — 1¼" diameter, hard glazed enamel, heavily gold plated pin and safety lock catch, $9.00 doz. (plus Fed. tax). Over 35 safety-minded titles to choose from.

Write for Catalog of Service and Safety Emblems Today!

CLARENCE WILLIAMS

Williams Jewelry & Mfg. Co.

Silversmiths Bldg. 10 S. Wabash Ave.
Phone CEntral 6-5018 Chicago 3, Ill.

equipment is readily granted upon justification.

7. While the program can be forced from the top down, it is sold from the bottom up.
8. All divisions annually budget sums of money for improvements in plant hygiene, and the Medical Department has the principal voice in recommending what those improvements will be.

FOG HAZARDS

From Page 13

bays in the building are covered by the fog-dispersing heat blanket but these are the important ones where the acid tanks are situated.

The hot vapors rising from the tanks now meet air of almost equal temperature and the amount of condensation and resulting fog has been reduced considerably. There is no fog problem with the four rinse and two cold dip tanks also located in the building.

In addition to their capacity to handle large volumes of air and discharge it at high velocity to solve the fog problem, the heaters have another advantage that J&L engineers stated makes the equipment suitable for this application. They can use coke oven gas for fuel without endangering their service life. The stainless steel combustion chamber in each heater is resistant to corrosive attacks of the sulphur-bearing gas. Moreover, the stainless steel enables continuous operation of the heaters because it has higher heat resisting qualities than other types of metal used for combustion chambers. (Special corrosion-resistant gas valves also are used.)

Another problem encountered was low gas pressure. Use of low pressure coke oven gas necessitated installing on each heater a burner embodying a separate combustion blower.

During the summer months when condensation of vapor does not constitute a problem, the same heaters are used for ventilation by operating them with the burners shut off.

Labeling Solvent Containers

UNLABELED or inadequately labeled containers of solvent are serious hazards, as was demonstrated recently when a field engineer mistook a jug of solvent for a water jug and drank from it. There were no indications of the nature of the contents of the jug which had been used to refill containers of solvent and then left on the shelf where the water jug was usually placed. The accident caused six weeks' disability.

Another source of accident is the substitution of one solvent for another without a change of labels on the container. The exchange of a flammable for a nonflammable solvent in this manner may result in fire. Such an accident occurred when a highly flammable paint thinner was put on a rack in place of the solvent ordinarily used for cleaning purposes. The janitor did not know of the substitution and cleaned the floor around an electric motor with the paint thinner.

Drums of solvent obtained from the manufacturer are generally labeled with information which indicates whether the contents are flammable, toxic, or both, and gives the most important precautions to be observed. After the solvent is received in the plant, it is often poured from the original container into bottles, cans, jugs, etc., for distribution as needed. These smaller containers have labels which duplicate the information on the original label. Otherwise, the safety information on the drum in the storage room will be of no use to the men handling the containers out in the shop.

Solvents purchased from sources other than the manufacturer do not always carry precautionary information. In such instances, proper warning labels which may be obtained from the manufacturer should be put on the container before the solvent is put to use.—*Safety Research Institute.*

ATTENTION, BOB RIPLEY!

The following news item appeared in the Morning Eagle of Wichita, Kansas:

Most unusual of the various accidents which sent 27 persons to local hospitals for emergency aid Wednesday was that of W. S. Slyter. While working for the Otis Elevator company, a brick fell five stories, striking Slyter on the bridge of the nose. **No fracture was reported at St. Francis hospital!** (Exclamation and bold face type is ours . . .)

WATCH FOR OUR OCTOBER SHOW ISSUE!

EYE SAFETY

is a TWO-IN-ONE program

No eye safety program is complete unless it is built on the basis of *protection plus correction. Protection* against the many hazards which can cause costly eye accidents. *Correction,* professionally-prescribed, for the 50% of workers whose vision needs refractive help if they are to see clearly . . . or safely. Call on your Bausch & Lomb distributor for prompt prescription service on industrial eyewear. Your safety record and your production record will improve.

Write for a copy of the new Bausch & Lomb catalog on industrial eyewear. It includes a highly informative discussion of the theory and design of protective industrial eyewear. It also describes the complete line of Bausch & Lomb Occupational Eyewear, the eyewear built to the highest quality standards. Bausch & Lomb Optical Co., 745-H St. Paul St., Rochester 2, N. Y.

BAUSCH & LOMB

Safety Eyewear

YOU REACH MORE THAN....

20,000 AUTHENTICATED BUYERS

WITH THE

CERTIFIED BUYING POWER PLAN

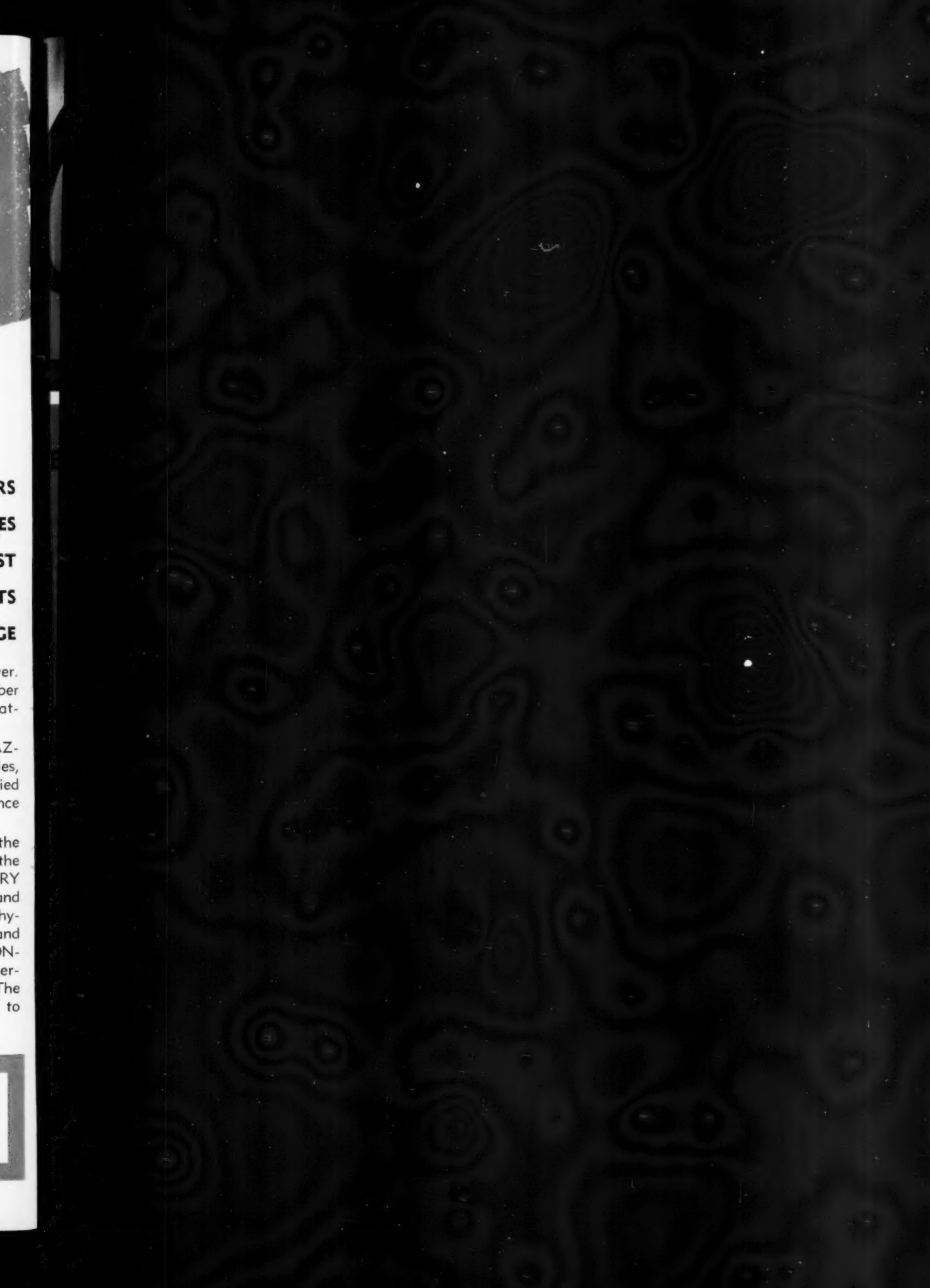
- ✓ ACTIVE BUYERS
- ✓ INCREASED SALES
- ✓ PRODUCT INTEREST
- ✓ LOWERED SELLING COSTS
- ✓ COMPLETE MARKET COVERAGE

OCCUPATIONAL HAZARDS' "C. B. P." Plan identifies its more than 20,000 readers as authenticated, active BUYERS. The identity of each reader as a "CERTIFIED" buyer is validated by 31 selected safety equipment distributors located in key marketing areas. These distributors subscribe to OCCUPATIONAL HAZARDS for their active customers and best prospects. The distributors pay for each subscription. OCCUPATIONAL HAZARDS' more than 20,000 jobber-authenticated reader-buyers become more than just circulation . . . they represent the known potential national market for safety equipment. This makes OCCUPATIONAL HAZARDS the REAL sales link between the safety equipment manufacturer and his prospects.

OCCUPATIONAL HAZARDS' Controlled Circulation Audit guarantees QUANTITY distribution by industry and by individual. Under CCA the "CERTIFIED BUYING POWER" Plan guarantees that each reader also is an authenticated, active buyer. The safety equipment distributor, as subscriber for his own best customers, acts as the authenticating agent.

Thus, under "C. B. P." OCCUPATIONAL HAZARDS reaches more than just names, or titles, or companies . . . it reaches known, identified BUYERS. Here is the Number 1 buying audience to whom you must tell your story in '49.

Other "C. B. P." magazines published by the Industrial Publishing Company are FLOW, for the material handling equipment field, INDUSTRY and WELDING, for the welding equipment and supply field, APPLIED HYDRAULICS, for the hydraulic and air circuit engineering field, and COMMERCIAL REFRIGERATION AND AIR CONDITIONING, for the air conditioning and refrigeration equipment field. Send for our booklet: "The 'C. B. P.' Plan . . . A New Dimension Added to Standard Magazine Audits."

OCCUPATIONAL HAZARDS

1240 ONTARIO STREET - CLEVELAND 13, OHIO